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1907
Descriptive Catalogue of
Fruit & Ornamental
TREES
U.S. DEPT. OF AGRICULTURE
WASHINGTON, D. C.

Grape-Vines 🌿 Small Fruits
Shrubs 🌿 Roses 🌿 Plants 🌿 etc.



W. T. HOOD & CO.
Old Dominion Nurseries
RICHMOND, VIRGINIA



A Few Words of Advice to Customers

PLEASE LET US HAVE YOUR ORDERS EARLY
WHETHER THROUGH THE MAILS OR THROUGH OUR AGENTS

Ordering Through Our Agents

These agents have been employed by us after careful inquiry into their characters, they having been recommended to us by prominent citizens in high standing, as trustworthy and reliable men. We respectfully urge all our customers to order through them if convenient, and in so doing they will save freight charges; for by taking a large number of orders for delivery at a certain point there is a great reduction in the freight, which we can afford to prepay. We endeavor to get a good agent in every county; though, if there be no agents canvassing in your neighborhood, you will, of course, be obliged to order direct from us through the mails.

In ordering through our agents, please see that the agent writes your name and place of delivery plainly at the top of the order, and also your post office, and the number of miles and the direction you live from the point of delivery. The signature at the bottom of order must be made only by the party ordering.

Ordering Through the Mails

Please state if we shall ship by express or freight. Be careful to write your name, shipping directions, and varieties plainly; whether you want standard or dwarf. If, however, the selection is left to us, we will select according to our best judgment and long experience, taking into consideration the best varieties suited to the section from which the order comes. Orders from persons who are unknown to us should be accompanied by cash or satisfactory references. We deliver the stock at the depots and express offices in Richmond in good order. We take a receipt for same, and our responsibility ceases there. We are not responsible for loss or damage to goods in transit.

Mistakes

In case of any mistake on our part, immediate notice should be given, so that it can be rectified or explained.

Descriptive Catalogue of
**FRUIT & ORNAMENTAL
TREES**

Grape-Vines, Small Fruits, Shrubs, Plants, Etc.



CULTIVATED AND FOR SALE BY

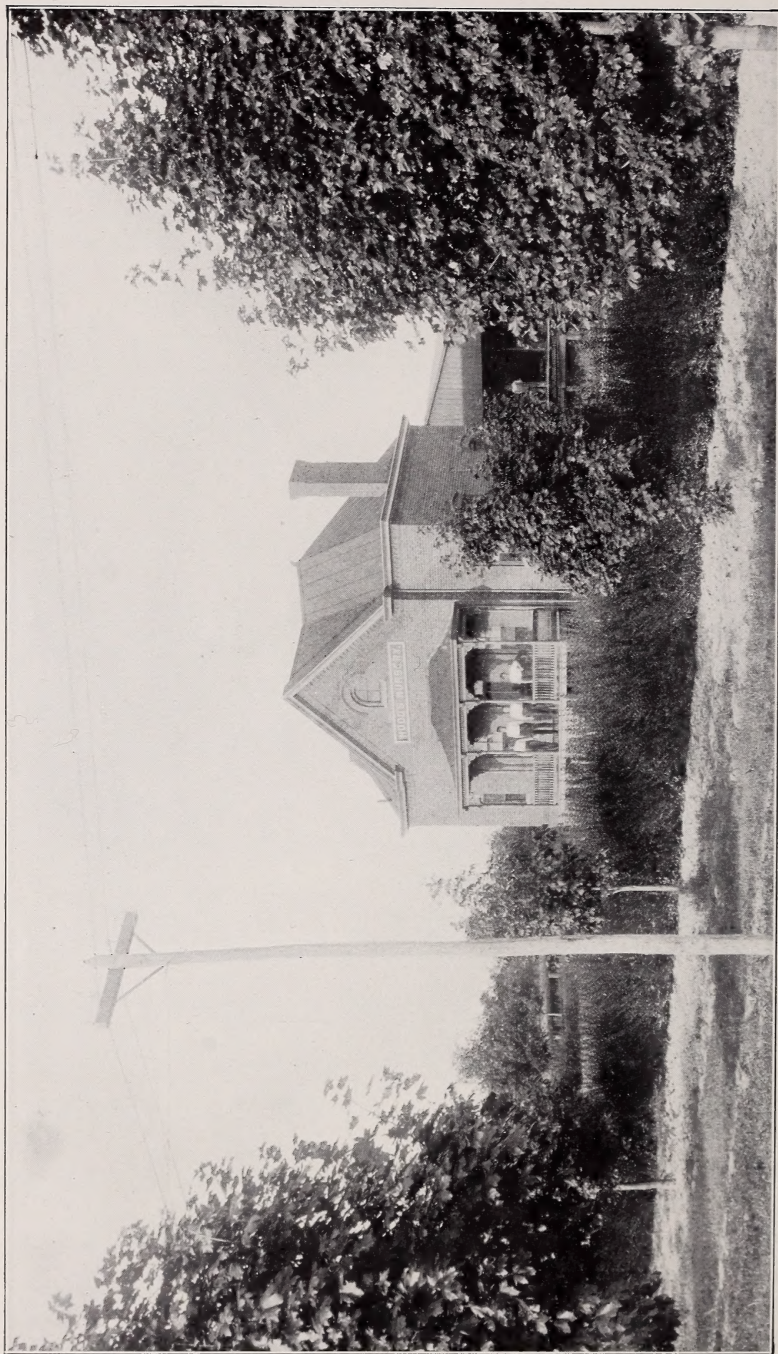
W. T. HOOD & CO.

Old Dominion Nurseries

RICHMOND, VIRGINIA

OFFICES: Chamberlayne and Rennie Avenues, on First St. (Lakeside) Car Line, one and one-half miles from Richmond.

NURSERIES: Henrico Co. (Chamberlayne and Rennie Avenues) and Wickhams, Hanover Co., Virginia.



Office, Old Dominion Nurseries. W. T. Hood & Co., Proprietors, Chamberlayne and Rennie avenues, Lakeside Car Line.

PREFACE



AFTER more than forty years' experience of our Mr. Hood in the nursery business, all of which time has been spent in this city, we take great pleasure in presenting this new edition of our Catalogue to our friends and patrons, hoping that they will accept our thanks for the generous aid and confidence they have bestowed upon us in the past; and it will be our aim in the future, by strict attention to business and honest dealing in all transactions, to merit a continuance of the same. We will spare no needful amount of cost and pains to grow the very best stock that can be grown, and shall only recommend such fruits as have proved to be good; and new fruits that have not been fully tested we will recommend to be planted in small lots, which will be a great means of disseminating them, and may be the cause of having many new fruits that will prove to do as well and be as popular all over the country as Early Harvest, Johnson's Fine Winter, Ben Davis and Winesap in Apples; Bartlett, Duchess and Kieffer in Pears; Elberta, Crawford's Early and Late, and Heath Cling in Peaches; Brighton, Concord and Martha in Grapes.

In the past twenty-five years there has been great improvement in growing first-class stock, and the people have been educated to know what are good trees. Those that we sent out twenty-five years ago for first-class would not be considered second-class now. For instance, twenty-five years ago we planted 23,760 apple grafts to one acre; for the last four years we have planted only 15,488 grafts to the acre. Then grafting was done on the piece-root system, making five to six grafts out of one seedling; now we use only one seedling for each graft, which we claim to be the true and only way it ought to be done; and with our motto to send out only the best stock, we do not make more than 40 or 50 per cent of trees that we can fill our orders with, and the others we destroy, digging out those that we know will not make good trees, giving those left a much better chance to make strong and healthy trees; and while we do not claim to sell cheaper trees than any other first-class nursery, we think they will compare favorably with them and are as cheap as we can grow the stock we offer. As to our reliability not to send out anything that is not true to name, we will refer to the many references we have received, the pleasure we take in growing good trees, and our long association with the business. While we employ only good men and use every effort to satisfy our customers, mistakes will sometimes occur, which we are always willing to correct.

Our Nurseries are located one and one-half miles north of the city, on the Lakeside Car Line, and at Wickams, Hanover county, Va., between the C. & O. and R. F. & P. R. R. We employ throughout the year in the cultivation of our stock from fifty to seventy-five hands, and work thirty horses and mules.

We secured control for a number of years of one of the most desirable farms in Hanover county (twenty miles from Richmond); chocolate loam and gray soil; this farm is reputed to be one of the finest plantations within thirty miles of Richmond, and has not heretofore been planted in trees. The land has all the requirements for the propagation of the very finest nursery stock, and the major portion of our planting is being done there. Our Mr. Hood personally spent considerable time, making a minute examination of various farms in the vicinity, and failed in every instance to discover any trace whatsoever of injurious diseases to fruit trees, vines and shrubs. We consider ourselves especially fortunate in securing such admirably adapted land and can promise our patrons in future, as furnished in the past, nursery stock of the

Certificate of Inspection accompanies all shipments. Stock thoroughly fumigated before shipping

very highest quality, first-class in every particular and true to name. We shall continue to use, as we have always done, the very best stock to be had for propagating purposes.

Our facilities for growing, packing and shipping stock of all kinds known to first-class nurserymen cannot be excelled.

W. T. HOOD & CO., RICHMOND, VA.

REMARKS

To the planter or purchaser of nursery stock at least three things are indispensable: first, varieties true to name; second, healthy, vigorous, well-matured trees or plants, and third, careful and judicious packing, without which all may be lost.

We give the most careful scrutiny to the propagation of varieties, endeavoring by all methods known to us to protect ourselves from error or imposition, and rejecting anything of which we have reason to feel suspicious. By such careful and constant watching and attention we are warranted in offering our stock as pure and absolutely true to name.

Our soil being of a character best suited to produce the healthiest conditions of growth—that solid, firm texture of the wood, with abundant fibrous root, so necessary to successful transplanting—we are enabled to offer the products of our Nurseries with entire confidence to planters in all sections of the country.

We give to our packing and shipping careful personal supervision, and to still further protect our patrons, as well as ourselves, against loss in this direction, we employ the most skilled and competent hands to assist us.

By careful consideration of the wants of our trade and faithful attention to business, we hope to continue to merit and receive a share of the patronage of lovers and buyers of choice fruits and ornamentals.

GUARANTEE OF GENUINENESS

While we exercise the greatest diligence and care to have all our trees, etc., true to label, and hold ourselves in readiness, on proper proof, to replace all trees, etc., that may prove untrue to label free of charge, or to refund the amount paid, it is mutually understood and agreed to, between the purchaser and ourselves, that our guarantee of genuineness shall in no case make us liable for any sum greater than that originally received for said trees, etc., that shall prove untrue.

ADVICE TO PLANTERS

Select thrifty young trees in preference to old or very large ones; the roots are more tender and fibrous and they bear transplanting better and are far more apt to live; they can also be more easily trimmed and shaped to any desired form, and in the course of a few years will usually outstrip the older ones in growth.

SELECTION OF VARIETIES

Be careful to choose such as you know to be suited to your section; or, as we have suggested heretofore, leave the selection to us. It is fair to presume that with the experience of more than twenty years, giving all our time and talent to the subject, our information must be at least equal to that of the average planter. Varieties are almost innumerable, and many of them either worthless or of little value. Great injustice has been done by the compilation of long lists, which serve only to induce the orchardist to plant a large assortment, the greater number of which generally fail

to give satisfaction. A few good varieties, ripening in succession throughout the season, are far preferable for all purposes. What the planter particularly needs is a sufficient number of those varieties which have been tried and proved themselves worthy of cultivation.

It is our determination to propagate and recommend only such as we confidently believe to be of superior quality.

A few words as to quality of stock may not be inappropriate. Some are induced by low prices to plant second- or third-class trees, saying "your first-class stock costs more." Now, this is as it should be. It costs more simply because it is worth more,—worth more to the nurseryman, and worth tenfold more to the planter.

It is useless, yea absurd, to expect a nice, thrifty, productive tree from a poor, weakly, stunted scion. Men deal not so in the animal kingdom; the best of the flock is always the choice of the well-informed breeder.

Let us insist upon it that you plant nothing but strictly first-class trees, which will always cost first-class prices.

THE SOIL

A rich loam is the best for fruit, made sufficiently dry by artificial draining, if necessary; but all soils can be made available by judicious treatment.

PREPARATION FOR PLANTING

Plow and subsoil repeatedly, so as to thoroughly pulverize to a depth of 12 to 15 inches. When planting upon the lawn or grass plots, remove the sod for a diameter of 4 or 5 feet and keep this space well worked and free from weeds. Dig the hole deeper and larger than is necessary, to admit all the roots in their natural position, keeping the surface and subsoil separate. Cut off broken and bruised roots and shorten the tops to half a dozen good buds, except for fall planting, when it is better to defer top-pruning until the following spring, which should be done before the buds begin to push. If not prepared to plant when your stock arrives, "heel in," by digging a trench deep enough to admit all the roots, and setting the trees therein as thick as they can stand, carefully packing the earth about the roots, taking up when required. Never leave the roots exposed to the sun and air.

PREPARING THE ROOTS

Immediately before planting, all the bruised or wounded parts, where cut with the spade, should be pared off smoothly, to prevent decay and to enable them to heal over by granulations during the growth of the tree. Then dip them in a bed of mud, which will coat over every part evenly, and leave no portion in contact with the air which accidentally might not be reached by the earth in filling the hole. The use of water in settling the earth amongst the roots will be found eminently serviceable. Let there be a few quarts poured in while the hole is filling up. If the trees have been out of the ground for a long time, and become dry and shriveled, they should be immersed in water twenty-four hours before planting. Fruit trees sometimes remain with fresh and green branches, but with unswollen buds, till midsummer; instead of watering such at the roots, let the body and branches be wet every evening regularly, about sundown, with a watering-pot, and it will in nearly all cases bring them into active growth.

SHORTENING-IN THE BRANCHES

However carefully trees may be taken up, they will lose a portion of their roots, and if the whole top is allowed to remain the demand will be so great upon the roots that in many cases it will prove fatal to the tree. To obviate this, then, it becomes necessary to shorten-in the branches, which should be done at the time of planting, and in a manner to correspond with the loss of roots. If the tree has lost the greater

portion of its roots, a severe shortening-in of the branches will be necessary ; if only a small portion of the roots have been cut off, more moderate pruning will be sufficient. Particular attention to this matter will save many trees that otherwise would perish.

PLANTING

Fill up the hole with surface soil, so that the tree will stand as it did when in the nursery, after the earth is settled, except Dwarf Pears, which should be planted deep enough to cover the Quince stock upon which they are budded 2 or 3 inches. Work the soil thoroughly among the roots, and when well covered tramp firmly. Set the tree firm as a post, but leave the surface filling (of poorer soil) light and loose. No staking will be required except with very tall trees. Never let manure come in contact with the roots.

MULCHING

The value of mulching cannot be overestimated. It increases the fertility of the soil, protects the tree alike from drought and frost, and adds materially to the growth and vigor of young orchards. The trifling cost of material and labor, and the immense benefits derived, commend it to every one. Pine tags, straw, leaves, coarse manure, shavings or tan bark may be used. Some of these may be procured by every one.

Remove the mulching from the stem of the tree during the winter, otherwise mice may harbor there and injure it.

We also advise removing the mulch several times during the growing season and loosening up the soil about the trees.

CULTIVATING

When the transplanting is finished, many persons are under the impression that their work is done, and they can do nothing more for the tree ; but this is a very mistaken idea. It is an important matter to have them well planted, but doubly important to have them well cultivated afterwards. Enveloped in weeds and grass, what plant can flourish? What farmer, for an instant, would think of raising a crop of Indian corn in the thick and tall grass of a meadow? Such an idea, he would at once say, would be preposterous. We will say that it is not more impossible than the idea of raising a thrifty orchard under the same treatment. It is indispensably necessary that the ground should be well cultivated to obtain fine fruit. From the neglect of this arises so much of the dissatisfaction of tree planters. Give to your trees for a few years a clean, mellow and fertile soil, and they will bend under copious loads of fine fruit, and yield to the cultivator his reward. The experiment only is enough to convince any one of the advantage of good culture. Dwarf Pears, more than any other tree, require a deep, rich soil and clean cultivation. In cultivating, great care should be taken not to injure the trees by rubbing the bark off, which will often happen if careless hands (or those that are not) use long singletrees. We use a singletree 18 inches, and always wrap the end and trace next to the row, and seldom bark a tree. The best tools are one-horse turn-plow (which every farmer or fruit-grower should have) and cultivator. We try to cultivate our nursery after every rain from April to October. The best crops for an orchard are those requiring summer culture—such as potatoes, beans, etc. Winter crops are little better than no culture. Rye is decidedly injurious.

PRUNING

We recommend the greatest care and moderation in this operation, believing, as we do, that upon the whole there is more injury done by the use of pruning instruments in unskilful hands than would result from its entire neglect. Some of the objects sought are to diminish the thick growth, to increase the vigor of the branches,

to admit light and air, and to form a well-shaped top. We are opposed to the too common practice of trimming trees as high as a man's head, leaving a long, naked stem, exposed to the ravages of insects and the deleterious effects of sun and wind, as well as other sudden and extreme changes of the atmosphere. If a tree be allowed to branch near the ground, its danger from these ills will be lessened, and it will grow much stronger and faster, bear more fruit, which will be more easily gathered, less liable to be blown down, and, we may add, every way better. If watched closely when young and growing, it will never become necessary to take off large limbs. Occasional pinching or cropping off of the ends of a branch to give the tree proper shape, and removing those that cross or crowd each other, will be all that will be needed by most trees. Peach trees would be greatly benefited by an annual shortening-in of the branches, say one-half of the previous year's growth; this may be done at any time after the fall of the leaf until the buds commence swelling in the spring; they never need any thinning-out of the branches. Dwarf Pears also need careful attention annually, to keep them in shape, by cutting back the rampant and straggling shoots; they should be pruned down instead of up, never allowing them to grow high; or the top will become too heavy for the roots, and increase the danger of blowing down.

HOW TO WINTER TREES PROCURED IN THE FALL

The practice of procuring supplies of trees in the fall is becoming more and more general as each season demonstrates its wisdom. It is a more favorable time than spring, because of the colder weather, and the lighter pressure of business with nurserymen, the freighting companies, and the planter. Even when fall planting is not desirable, by reason of severity of the climate, the stock may be procured in the fall, and thus be on hand ready for the opportune moment in the spring. To insure success, you have only to get the trees before freezing weather and bury them in the following manner: Choose a dry spot where no water will stand during the winter, with no grass near it to invite mice. Dig a trench, throwing out enough dirt to admit one layer of roots below the surface, and place the trees in it, inclined to an angle of forty-five degrees or more. Widen the trench, throwing the soil among the roots in position; place another layer in the trench, reclining the tops on the others, and so on until all are in the trench; then finish by throwing up more soil until the tops of the trees are nearly or quite covered. It is also well to bank up the earth around the sides to insure more thorough protection. The exposed tops should then be covered with pine boughs, which insures them against any possibility of injury. Care should be taken to fill solid all the interstices among the roots. In the spring the roots will be found to have formed the granulation necessary to the production of new spongioles and when planted at the proper time will start to immediate growth.

TREATMENT OF TREES COMING TO HAND OUT OF SEASON

It sometimes happens that trees are received in a frosted state; but if they are properly managed they will not be injured by it. Let the package be put, unopened, in a cellar, or some such place—cool, but free from frost—until it is perfectly thawed, when it can be unpacked, and either planted or placed in a trench until convenient to plant. Trees received in the fall for spring planting should at once be unpacked, and a trench dug in a rather dry, sheltering position, when the roots should be well covered. So treated, they will be preserved without the least injury until spring. If they should come to hand late in the spring, and appear much dried, plunge the bundle into a pool of water, there to remain for twenty-four hours, or more, if very much wilted, after which it should be unpacked, and the roots and half the stems should be buried in soil made quite wet by watering; there let them remain until the bark expands to its natural fulness, when they may be taken up and planted as before directed, and we will guarantee you a good reward for your labor.

PLANT YOUNG TREES

We cannot too strongly recommend to our customers the procuring of young trees, especially for orchard planting, instead of selecting the largest that can be had, to secure a more immediate effect. They can be taken up with more perfect roots, and will become sooner established in a new location. They can also be more readily trained to any desired shape. The largest and most successful planters invariably select young, thrifty trees, as the surest in the end to give thorough satisfaction.

For small grounds, or street planting, when it is necessary to make a show as soon as possible, large trees are often desirable, and when handled with care should not fail to do well; but with the general planter the average of loss will be much less, and both time and money will be saved if young trees are selected to commence with.

THE GROWTH OF TREES

As many persons are unacquainted with the varied growth of the different varieties of fruit trees, and are dissatisfied with the difference in appearance of their trees, we will briefly give a few examples, thereby hoping to avoid a most unpleasant difficulty sometimes taking place between the inexperienced purchaser and the nurseryman. For instance: were a customer to order a lot of apple trees, naming amongst them American Summer Pearmain, Tetofsky, Albemarle Pippin, etc., he would get some of the finest varieties under culture, but the trees would be small; consequently, the nurseryman must suffer a severe lecture, and, next, his neighbors would be advised not to patronize that man, for his trees are too small. Should he order a lot of Summer Sweet Paradise, Summer Queen, Smokehouse, Winesap and Roxbury Russet, he would get large, rapid-growing trees and choice fruit, but so crooked and twisted as again to displease the purchaser. But should he send for Bullock Pippin, Baltzley, Paradise, Baldwin, Horse, Yates, Dominie, etc., he would receive large, well-formed trees which would please his eye and no doubt cause him to advise his neighbors to purchase there, yet some of the fruit would be quite inferior to the other lists.

DISTANCES FOR PLANTING

Standard apples	30 feet apart each way
Standard pears and strong-growing cherries	20 " " "
Duke and Morello cherries	18 " " "
Standard plums, apricots, peaches, nectarines	16 to 18 " " "
Dwarf pears	10 to 12 " " "
Dwarf apples	10 to 12 " " "
Grapes, rows 8 to 16 feet apart	8 to 16 feet in rows
Currants and gooseberries	3 to 4 feet apart
Raspberries and blackberries	3 to 4 feet by 5 to 7 feet apart
Strawberries, for field culture	1½ to 3½ feet by 3 to 4 feet apart
Strawberries, for garden culture	1 to 2 feet apart

NUMBER OF TREES ON AN ACRE

30 feet apart each way	50	10 feet apart each way	435
25 " " "	71	8 " " "	680
20 " " "	110	6 " " "	1,210
18 " " "	135	5 " " "	1,745
15 " " "	205	4 " " "	2,725
12 " " "	300	3 " " "	4,840

RULE.—Multiply the distance in feet between the rows by the distance the plants are apart in the rows, and the product will be the number of square feet for each plant or hill; which, divided into the number of feet in an acre (43,560), will give the number of plants or trees to the acre.

"Your agent, W. J. McDearmon, has been traveling here in the interest of your nursery, the Old Dominion, for about thirteen years, and his trade has increased every year. The stock which he sells always gives satisfaction; it is not cheap, trashy stock, but all first-class stock and worth the money he asks for it. There are plenty of your trees here to show for itself; they are true to name."—HENRY GRIEB, Jonesboro, Ill., August 9, 1901.



Fruit Department

Since our last Catalogue was issued we have taken several varieties from our lists as not proving worthy of cultivation, and others we have taken from our descriptive list, as we consider that it was too large; but we shall still continue to grow them in limited numbers, and if any of these varieties do well in any particular locality we shall be able to furnish them, but advise to confine your list to the descriptive kinds.

Select Apples

The first fruit, both in importance and general culture, is the Apple. Its period, unlike that of other fruits, extends nearly or quite through the year. By planting judicious selections of summer, autumn and winter sorts, a constant succession can be easily obtained of this indispensable fruit for family use.

As fruit has become cheaper on account of the increased supply, a large and constantly increasing European demand has sprung up, which affords highly remunerative prices for the best selected specimens for our orchards, while the new process of evaporation of fruit has become a recognized auxiliary to the horticulture of the land. With the immense consumption by this process of evaporation, it may be doubted if Apple orcharding will ever, in any season, be less than highly remunerative. All the surplus of orchards, all "windfalls" and defective specimens, can at once be gathered and sold at a fair price to the evaporating establishments, which now exist in almost every town in all fruit-growing sections.

SUMMER VARIETIES

American Summer. (American Summer Pearmain.) Medium size, oblong, nearly covered with streaks and dots of red; flesh tender, juicy, with rich subacid flavor; fine. Tree a slow grower, but bears early and abundantly. Continues in use for several weeks. Last of July and Aug.

Benoni. Medium size, round, deep red; flesh yellow, tender, subacid. An excellent Apple. July.

Bough. (Sweet Bough.) Large, roundish, sometimes conical; pale yellow; flesh white, very tender, with an excellent, sweet flavor. Tree moderately vigorous and very productive. July.

"I was handed a letter by your agent here requesting a recommendation for your stock, which I can cheerfully give. Being a fruit-grower on a large scale, I buy trees from several other nurseries, and I find your trees to be by far the best ever sold in this state by any nursery."—F. F. MARTIN, Walcott, Ark, Aug. 8, 1904.



Gravenstein.

SUMMER APPLES, continued

Carolina June. (Carolina Red June.) An early bearer and very productive. Fruit medium size, dark crimson; flesh white, very tender, fine-grained, juicy, subacid. June and July.

Early Colton. One of the best early Apples, ripening with the old Early May, some ten days before Early Harvest, and continues to ripen for two or three weeks, which makes it a valuable family Apple. It is of beautiful appearance, medium size, yellowish white, with a tint of crimson where exposed to the sun.

Early Harvest. Rather large, round, yellow; flesh nearly white, tender, juicy, crisp, with a rich, sprightly, subacid flavor. Tree a moderate grower and very productive. It has no superior among early Apples. June and July.

Early Red. Very valuable Pennsylvania Apple, which we have thoroughly tested here. Fine size, beautiful showy red color. An immense and sure bearer; ripens through a long period of time. A first-rate shipper and good seller in the market; ought to be in every orchard. Ripens from middle to last of July.

Early Ripe. This fine Apple, coming as does immediately after the Early Harvest, fills a want long felt by the orchardist. Its large size, handsome appearance and good bearing qualities combine to make it the most profitable market variety of its season. The tree is hardy and of vigorous growth. Fruit large, yellowish white; flesh white, juicy, subacid; fine for the table or cooking. First of July.

Fanny. Medium to slightly above, covered with two shades of red; handsome. Tree a fine, upright, strong grower and good bearer. A week or ten days later than Early Ripe; fine quality. A profitable variety.

Fourth of July. Valuable for cooking and market. Fruit medium, roundish oblate-conical, slightly ribbed; whitish yellow, striped and splashed with bright red. It has been thoroughly tested, and found to be one of the very best early Apples. Matures early in July.

Gravenstein. Large, roundish, striped with red; flesh tender, juicy, very rich, with subacid, high flavor. Productive, handsome and excellent; fine in all localities. August.

Golden Sweeting. Rather large, rich yellow; flesh juicy, tender, sweet. One of the best sweet Apples; very popular variety. August.

Horse. Large, yellow; flesh coarse, subacid. Tree vigorous. Fine for cooking and for market; very popular South. August.

Jonathan of Eastern N. C. Large, white; subacid. Very popular. September.

Maiden's Blush. Rather large, oblate, smooth, regular, with a fine, evenly shaded red cheek or blush, on a clear pale yellow ground; flesh white, tender, sprightly, with a pleasant subacid flavor. This variety forms a handsome, rapid-growing tree, with a fine spreading head, and bears large crops. August to October.

"I consider your trees far superior to those bought of any other nursery. Their growth is rapid and their early-bearing qualities remarkable. All my orders for trees shall certainly be placed in the hands of your agent, Capt. J. S. Coates, of whom I obtained my present assortment."—EDGAR L. WALDROPE, Raleigh, Va., July 29, 1904.

SUMMER APPLES, continued

Oldenburg. A Russian variety of very handsome appearance and great value. Tree very hardy, vigorous, and an abundant bearer. Fruit medium to large, golden yellow, nearly covered with streaks of crimson; flesh tender, juicy, pleasant. A valuable variety for the market. August.

Red Astrachan. Rather large, approaching conical, covered with deep crimson, overspread with a thick bloom; flesh juicy, rich, acid. From its earliness, handsome appearance, and the vigor of the tree and its excellent culinary qualities, it is worthy of general cultivation. July.

Red Bietigheimer. A very large and beautiful Apple of German origin. Cream-colored, shaded with light red to purple-crimson; flesh white, firm, subacid, with a brisk, pleasant flavor. Tree a strong grower, with large, luxuriant foliage. One of the largest and handsomest of all Apples, and succeeds everywhere. August and September.

South Carolina Summer. A seedling of Buff. Size medium to large, color bright red; flesh white, firm and crisp, very juicy, rich. The Apple is high-colored and as bright as if varnished, and we know of no other variety as showy at the same season. The surest bearer we know of; two-year-old trees have produced full crops in the nursery row; when other varieties fail, the South Carolina Summer produces fruit. It ripens, where it originated, in Spartanburg county, S. C., from June 15 to the middle of August. Introduced by us.

Summer King. The finest of its season. Fruit above medium to large, beautifully striped and covered with two shades of red; flesh tender and very fine in quality. Tree quite upright and vigorous, forming a beautiful round head in orchard. A desirable variety for either family use or market. Season August.

Summer Rambo of Pennsylvania. Large to very large, round, somewhat flattened, yellow and

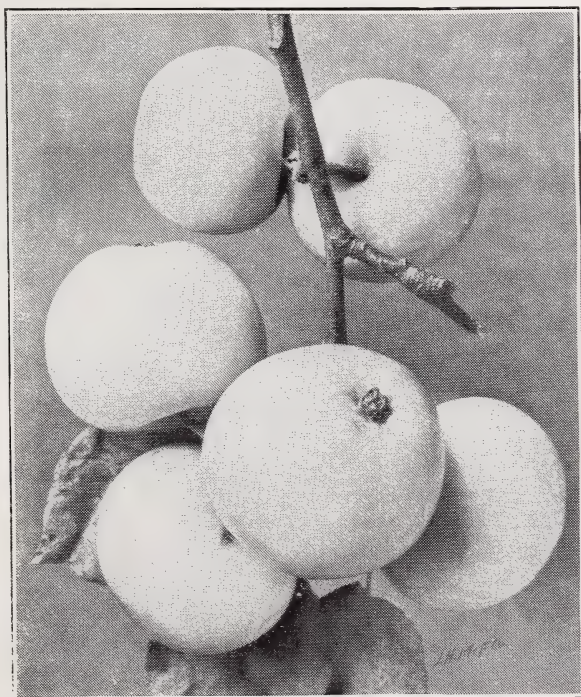
beautifully striped with red; flesh tender and rich, with a mild subacid flavor. August and September.

Yellow Transparent. Of Russian origin. It ripens fully ten days in advance of Early Harvest. Size medium, light transparent lemon-yellow, smooth waxen surface; flesh white, melting, juicy, and of excellent quality; for an early Apple an exceptionally good keeper and shipper. Tree a free, upright grower, prolific, and a remarkably early bearer.

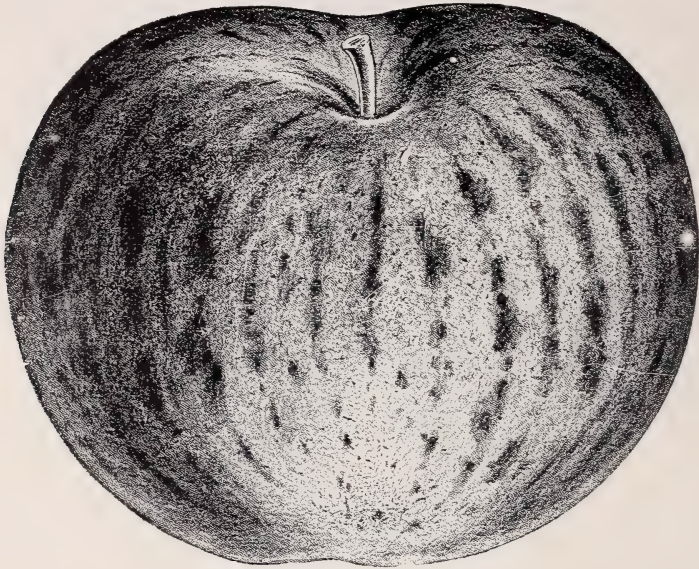
AUTUMN VARIETIES

Alexander. Tree vigorous. Fruit very large, regularly formed, conical; skin greenish yellow, faintly streaked with red on the shaded side, but orange, brilliantly streaked and marked with a bright red in the sun; flesh yellowish white, crisp, tender and juicy, with a pleasant flavor; good September to December.

Baltzley. Large, oblate; skin clear pale yellow, sometimes a blush next to the sun; flesh tender, juicy, sweet, with a good flavor. Tree an early and good bearer. A first-rate cooking Apple; deserves a place in every orchard. Oct.



Yellow Transparent.



Buckingham, or Winter Queen.

AUTUMN APPLES, continued

Bonum. Medium, oblate; color light to dark red; flesh yellow, firm, breaking fine-grained; flavor rich, subacid; first quality for dessert. A most excellent Apple; originated in North Carolina; deserves more general attention. September to December.

Buckingham, or Winter Queen. Large to very large, greenish yellow, mixed and striped with crimson or purplish red; flesh yellowish, breaking, tender, juicy, mild, sprightly, subacid. A handsome, healthy tree; comes into bearing very early, and very productive. This Apple is cultivated over a great portion of the southern and western states, and is everywhere very profitable and popular, succeeding in almost every locality. We consider it one of the most valuable sorts. October to January.

Fall Pippin. Very large, roundish oblong; yellow, rich and excellent. Tree vigorous and a fine bearer. Esteemed everywhere; in the valley of Virginia it is very popular as an early winter Apple. September to December.

Fall Cheese. Virginia Apple; very popular. Size large; green, beautifully striped with red; flesh white, subacid flavor, and rich aroma. Tree a vigorous grower and very productive. September to December.

Fallwater. Large, greenish yellow, with dull red cheek, slightly conical; juicy, subacid. Vigorous grower and very productive. Worthy of general cultivation. November to February.

Rebel. We unhesitatingly claim this to be the prettiest Apple that grows, and in quality it does not fall a particle below its beauty. Large size, round, bright, clear red on yellow ground, covered with a fine bloom; flesh yellowish white; rich, with an agreeable mingling of the saccharine and acid. Origin, Rappahannock county, Virginia. October to February.

Smith's Cider. Rather large; greenish white, striped with red; flesh tender, juicy, with a mild, subacid flavor; a prodigious bearer and profitable market variety. October to February.

Smokehouse. Fruit large, oblate, striped with red on yellow ground; flesh yellowish white, firm, juicy, crisp and rich, with a fine, aromatic, subacid flavor; unsurpassed for culinary purposes; productive. September to December.

Wine Apple. (English Redstreak, Hays' Winter). A valuable late autumn or early winter Apple; fruit large, skin yellow, more or less covered with mixed and broken stripes of red, splashed with crimson; flesh yellowish, firm, juicy; flavor acid to subacid, rich; quality good. October to December.

"I consider your nursery stock far superior to any I have bought or seen sent out to this country. I have tried other nurseries, but none give the satisfaction that I have received from your trees, and now I will buy from no other."—REV. JAMES HUGHS, Mero, Va., Aug. 13, 1901.

AUTUMN APPLES, continued

Wealthy. From Minnesota. Fruit medium, oblate; whitish yellow ground, shaded with deep, rich crimson in the sun; flesh white, fine-grained, tender, juicy, lively, vinous subacid. We have fruited this variety for the past five years, and we consider it one of the best for market and home use. Bears young and abundantly September.

Wood's Favorite. Originated with Mr. C. B. Wood, Rappahannock county, Va. Similar to Maiden's Blush, which it is supposed to be a seedling of, only later. Fruit above medium to large; beautiful orange-yellow, with a brilliant red blush; flesh firm, fine-grained, crisp, subacid. September to January.

WINTER VARIETIES

Albemarle Pippin. Perhaps no Apple stands higher in the market than this, or brings as high a price; yet others may be more profitable to the grower. It succeeds finely in the Piedmont region, and in many parts of the valley of Virginia, though in poor, cold soils it will not succeed. It needs a deep, warm soil to bring it to perfection. Where it does well we would still advise planting it largely for market. Fruit large, round, lop-sided, ribbed and irregular; surface smooth, yellowish green, sometimes bronzy, becoming yellow when ripe; flesh yellow, firm, brittle, juicy; flavor acid, rich, agreeable. January to April.

Ben Davis. Originated in Kentucky. Tree remarkably healthy, vigorous, and an abundant bearer; fruit large, handsome, striped; flesh whitish, tender, juicy, subacid; a very profitable market variety. Keeps till midwinter, or later.

Berry Red. It is supposed to be a chance seedling, found growing on the premises of Mr. John Berry, of Meadow Creek, in Whitley county, Ky. The parent tree has borne annual crops of fruit for nearly eighty years. Large to very large; color dark bright shining red; form oblate; flesh cream color; quality good; flavor excellent, and retained through its long keeping season; subacid, rich, juicy. As a market variety and a long keeper it is second to none.

Bentley's Sweet. Supposed origin, Virginia. Fruit medium, roundish, flattened at ends, sometimes slightly oblique and sometimes sides unequal; pale yellowish green, shaded with pale red, and moderately sprinkled with light and brown dots; flesh fine, whitish, compact; sweet, somewhat honeyed flavor; tree moderately vigorous, hardy, good bearer and keeper; very good. January to May.

Cannon Pearmain. Medium size, round oblong or ovate, shaded and striped with red; flesh yellow, firm; flavor mild, subacid; a good bearer, and valuable for marketing; deserves extensive planting in the South. January to April.

Delaware Red Winter. Color a beautiful red; medium in size; subacid and juicy; keeps till June, or later; tree vigorous and good bearer, productive; good keeper.

The Dickinson. Josiah Hoopes, ex-President of the Pennsylvania Horticultural Association, describes it as follows: "This promising variety originated in West Chester, Chester county, Pa., some twenty years ago, and was grown from the seed of the well-known Bellefleur. The original tree is not in a remarkably favorable position, nor has it received any especial treatment to induce fruitfulness or fair specimens, yet the result has been exceptionally good. It is a rather straggling grower. It has never missed producing a crop of fruit since arriving at bearing age, and has generally yielded above the average in quantity, thus entitling it to be termed a regular and abundant bearer. The fruit is large to very large, ovate inclining to conical; covered with faint streaks or marblings of red, deepening on the sunny side to dark red; flavor mild, subacid, abounding in juice; especially pleasant and agreeable; quality very good to best. Season, January and February."

Grimes' Golden. Medium, rich golden yellow; crisp, tender, juicy, with a peculiar aroma; good grower and early bearer; very popular in West Virginia. November to March.

Gano. Tree very healthy, vigorous, very hardy; an early, annual and prolific bearer; color bright red on yellow ground; large; flesh white, fine-grained, mild subacid. Close kin to Ben Davis; same season.

Ivanhoe. Medium to large, well proportioned; color a light golden yellow when mellow; flesh tender; flavor excellent, crisp and juicy. The tree is vigorous, bears very young—often at two years of age—and bears abundantly every year. Fruit hangs on the tree until Christmas or after.

Johnson's Fine Winter, or York Imperial. Medium size, truncated oval, angular; skin greenish yellow, nearly covered with bright red; flesh tender, crisp, juicy, aromatic; an enormous bearer, and hangs well on the tree. It is also a good keeper, retaining its flavor to the last. We cannot say too much in favor of this Apple. All things considered, it is scarcely second to any in the Catalogue as a profitable orchard variety. February to April.



Johnson's Fine Winter, or York Imperial. (See page 13.)

WINTER APPLES, continued

Jonathan. Fruit medium or small, roundish; skin yellow, nearly covered with dark or lively red; fine-grained, very tender and finely flavored. November to April.

Justice. This Apple, introduced by us, originated in Wayne county, W. Va., where it is prized as one of the best. Fruit very large; skin yellow, with heavy blush on sunny side, rather thick, smooth surface. It has a delicious flavor, subacid and is known to keep until the following July. Specimens of same have weighed as high as twenty-six ounces.

Kinnard's Choice. Fruit medium to large, roundish oblate; skin yellow and covered with dark red or crimson; flesh yellow, fine-grained, tender, rich, juicy, almost aromatic; most excellent. No Apple grown is of better quality. Tree vigorous and bears young; is thought to be a seedling of Winesap and is worthy of such parentage.

Longfield. One of the best of the new Russian Apples. Tree a strong grower and an early, abundant and annual bearer; flesh white, fine-grained, tender, juicy, with a rich, sprightly subacid flavor. December to April.

Lady Apple. A beautiful, small, dessert fruit; pale yellow, with brilliant red cheek; crisp, juicy and pleasant.

Limber Twig. An old southern Apple; medium size, dull red color; subacid and of rich flavor; good grower, bearer and keeper. January to April.

Lankford's Seedling. Origin, Kent county, Md. Tree hardy and a good bearer, bearing annual crops; fruit of large size, striped; quality excellent; keeps untill April.

McCuller's Winter. Originated in Wake county, North Carolina, and is one of the best keepers yet introduced; succeeds well in all eastern North Carolina, and in the sand hills of Moore and Harnett counties it seems to be at home. It is peculiarly suited to the eastern half of North Carolina and similar sections throughout the cotton belt. Size medium, dark and light red; quality good when fully matured; a very young and extremely prolific bearer. Season, January to March.

Mammoth Black Twig, or Paragon (Arkansas, of Arkansas). Tree very vigorous, hardy and productive; roots much stronger than Winesap; has larger leaves and twigs a shade darker; fruit about the same color as Winesap but larger; flavor fully equal to Winesap; believed to be a better keeper.

Mason's Stranger. Originated in Greenville county, Virginia. Medium size; color yellow, with russet dots on one side; flesh white, juicy and crisp; flavor nearly sweet; keeps through winter into spring; tree moderately thrifty and a good bearer. We recommend this as one of the best. January to March.

Morgan's Christmas. Our attention was brought to this promising Apple January, 1888, by Prof Adin L. Rucker, of

"The trees furnished by you in 1902 were splendid, and have caused a great deal of favorable comment."—W. H. TRAIL, Washington, D. C., *March 31, 1904.*



Mammoth Black Twig. (See preceding page.)

WINTER APPLES, continued

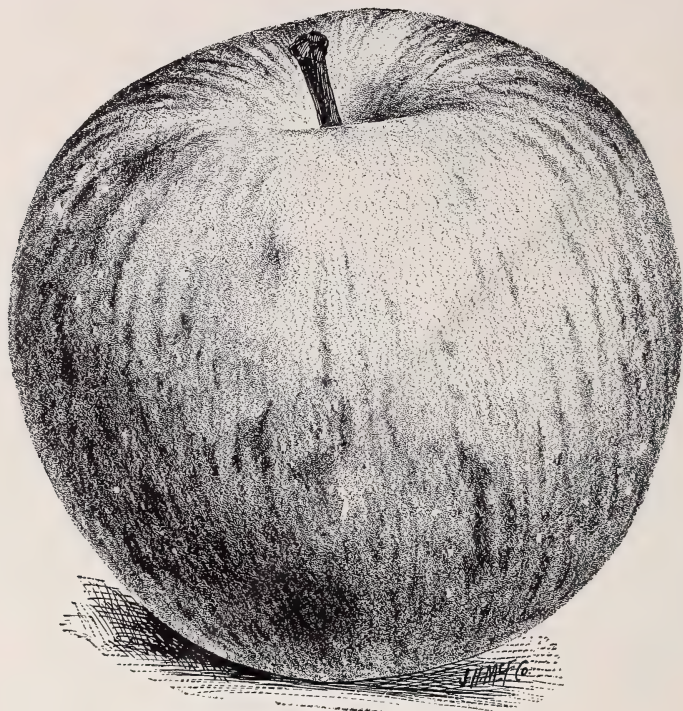
Rutherfordton, N. C., who sent us specimens at that time, and we made arrangements with the owner for the right to propagate it. Prof. Rucker describes it as follows: "Medium to large, is somewhat flattened at the ends; color rather peculiar, at the stem being dark red or black, which fades to yellow below the center to blossom end; but its crowning excellence is its flavor. I have never eaten any other Apple to equal it in its season." December to March.

Dixie, or Mosby's Best Red Winter. "This Apple is a native of Piedmont, Va., and is worthy of general cultivation, as evidence of which I have affixed my name, believing that unborn generations will be grateful to me for propagating and widely disseminating a real gem. I want to sell this Apple to my best friends, and to as many of them as possible. This Apple averages larger than the Winesap, and keeps longer. Color, beautiful red on yellow ground. Flavor, nearly sweet,

very slightly acid, delicious. Will ship well and sell at a fancy price as a dessert Apple in any market. The tree is a rapid grower, healthy and vigorous; comes into bearing very young, and has no off year." Introduced by A. F. Mosby.

Nansemond Beauty. From Nansemond county, Va.; said to excel the Winesap in beauty, size and keeping; its uniform size and handsome appearance render it a desirable sort for marketing. The fruit is large, uniform, of a beautiful crimson-red, somewhat shaded with yellow; flesh quite white, crisp, tender, juicy. Since its first introduction this variety has been steadily growing in favor, and from many sections we are now receiving favorable reports as to its value. December.

Nickajack. This Apple is very widely disseminated in the South. Fruit large, roundish; skin striped and splashed with crimson; flesh yellowish, compact, moderately tender and juicy, subacid; quality only good. November to March.



Stayman's Winesap. (See opposite page.)

WINTER APPLES, continued

Paradise Winter Sweet. Large, regularly formed, roundish; skin fair and smooth, dull green when picked, with a brownish blush; flesh white, fine grained, juicy, sweet, sprightly and very good; productive; an excellent Apple; well worthy a place in the orchard. November to February.

Roberson. Size large, roundish, slightly oblong—as large as the Albemarle Pippin; color rich yellow, covered with red, and shaded with deep red; flesh yellowish, crisp, juicy and well flavored; slightly subacid; tree a vigorous grower and abundant bearer; season from January 1 to June; origin, Patrick county, Va.

Roxbury Russet. Rather above medium size, roundish, oblate, remotely conical; skin covered with russet; flesh greenish white, rather granular, slightly crisp, with a good subacid flavor. November to January.

Romanite, or Carthouse. Medium size, roundish, oblong, striped and shaded with deep red on greenish yellow ground; flesh yellow, firm, juicy and rich, becoming tender and sprightly in the spring; valuable for the South; an early and

profuse bearer and a good keeper. January to May.

Royal Limbertwig. Very large, pale yellow, blushed or striped with red; flesh juicy, rich and very good; tree a thrifty grower and bears well. December to March.

Rawle's Genet. Tree moderately vigorous, putting forth its leaves and blossoms much later than other varieties in the spring, consequently avoiding injury by late frosts; it is therefore particularly valuable for the South and Southwest. Fruit medium; color pale red. January to April.

Rome Beauty. Large, yellow, striped, and mixed with light red; flesh yellow, breaking coarse-grained, subacid; valuable for market on account of its productiveness, size and beauty, as well as for its certain bearing. November to January.

Shockley. From Jackson county, Ga. Fruit medium size, yellow, with crimson cheek; flesh subacid, nearly sweet; tree erect, vigorous grower; comes into bearing early and is exceedingly productive. This is probably the most reliable and valuable winter variety for the South, and

WINTER APPLES, continued

is there justly very popular. Valuable in eastern Virginia and lower Maryland. Keeps till May or June.

Stark. Esteemed in Ohio as a long keeper and valuable market fruit. Fruit large, roundish; skin greenish yellow, much shaded with light and dark red, and sprinkled with brown dots; flesh yellowish, juicy, mild subacid. January to May.

Stayman's Winesap. J. W. Kerr, of Denton, Md., says: "It is one of the finest Apples under cultivation, so much superior to its parent—the old Winesap—in size, flavor, color and keeping qualities, as to completely crowd it out where both are known. It originated with Dr. Stayman, of Kansas, and was in bearing with me ten years ago. Its merits were so pronounced from the first as to warrant strong commendation. From my oldest trees specimens have been exhibited at county fairs and horticultural meetings, and sent to many pomologists and many prominent growers. It is now attracting attention everywhere as a profitable market variety. It has large size, bright red color, great productiveness and best quality to commend it. The tree is a vigorous grower, and, like its parent, is irregular and drooping in habit, and adapts itself readily to different soils and situations. Truly it is a great Apple."

Sutton's Beauty. Origin Worcester, Mass. Fruit large, roundish, skin waxen yellow, striped with crimson; flesh ten-

der, subacid, good. Tree a free grower and productive. January and February.

Virginia Beauty. Very popular in Southwest Virginia, where it has been grown for the past thirty years or more. Medium to large; very dark red; subacid. Very valuable on account of its fine keeping qualities. We have been growing this variety for twenty-five years for the Southwest Virginia trade, but think it should be planted more freely in other sections. November to March.

Winesap. Fruit medium size, rather oblong; skin smooth, of a fine, dark red, with a few streaks and a little yellow ground appearing on the shady side; flesh yellow, firm, crisp, with a rich, high flavor. November to March.

Walbridge, or Edgar Red Streak. Medium, oblate; pale yellow shaded with red; flesh white, crisp, tender and juicy, mild subacid; tree hardy and vigorous. November to February.

Wolf River. An Apple peculiarly adapted to the West on account of its extreme hardness; very large and handsome; flesh whitish, juicy, subacid; a good bearer and a long keeper.

White Pippin. Fruit large, greenish white, pale yellow when ripe; flesh white, tender, with rich subacid flavor. January to March.

Yates. A Georgia variety of small size, dark red, and dotted with white dots; flesh firm, juicy, aromatic; immense bearer and good keeper

ADDITIONAL LIST OF APPLES WE GROW IN LIMITED NUMBERS

Abram	Gilliam's Winter	May	Pilot
A. G. Russett	Grindstone	Milam	Rambo
Arkansas	Jeffries	Missouri Pippin	Summer Rose
Baldwin	King	Northern Spy	Summer Queen
Belleflower	Ladies' Sweet	Peck's Pleasant	Summer Hagloe
Early Strawberry			

CRAB APPLES

The Crab Apple is valuable for preserving, jellies, cooking and cider, and some varieties are also desirable for table use. They are often planted for ornamental trees, being covered in spring with lovely fragrant blossoms, while in the summer and fall the fruit makes a handsome appearance on the tree. They will flourish in almost any soil and climate, come into bearing very early, and are very productive. We give below the most valuable sorts.

Bechtel's Double Rose-colored. This is a true American Crab Apple, producing quantities of fine, very fragrant, full double flowers, closely resembling roses. It is one of the rarest, most truly meritorious novelties ever introduced.

Hyslop. Fruit large for its class, produced in clusters; dark, rich red, covered with a thick blue bloom. Good for culinary uses and for cider.

Transcendent. Fruit large for its class; golden yellow, with a beautiful rich crim-

son cheek; when ripe the red or crimson nearly covers the fruit; flesh creamy yellow, crisp, subacid, pleasant and agreeable. Tree a rapid grower and productive. September.

Whitney. (No. 20.) Large, striped and splashed with red; flesh yellow to white, firm, juicy, with a pleasant subacid flavor. Hardy, vigorous, productive. August.

Yellow Siberian. Large, and of a beautiful golden yellow color. Tree vigorous, September.

Select Pears

The cultivation of this noble fruit is extending as its value is appreciated. The range of varieties is such that, like apples, they can be had in good eating condition from July until early spring.

The melting, juicy texture, the refined flavor and the delicate aroma of the Pear give it rank above all other fruits except the grape.

But the Pear, like most things highly desirable and valuable, cannot be had without attention, labor and skill. The relative price of the apple and the Pear being about as one to ten, show at the same time the superior value of the latter and the greater skill required to bring it to perfection.

One of the most important points in the management of Pears is to gather them at the proper time.

Summer Pears should be gathered at least ten days before they are ripe, and autumn Pears at least a fortnight. Winter varieties, if they will hang so long, may be left until the leaves begin to fall.

At the present time the demand is for choice fruit; inferior fruit brings scarcely a remunerative price, but the best will always pay well. Pears should have the best kind of cultivation; the fruit should be thinned so as not to over-produce. Care should be used in selecting for market only the best specimens, and with such effort and system on the part of the grower there will always come a satisfactory profit.

The Pear succeeds on most soils, but does best on a rather heavy loam. Budded on its own stock it makes a standard tree, and on the French or Angers quince a dwarf—the former being best adapted to large, permanent orchards; the latter (requiring garden culture and severe pruning every year) to smaller orchards, fruit yards and gardens.

Dwarfs must always be planted sufficiently deep to cover the junction of the Pear and quince two or three inches—the soil made rich and well tilled, and about one-half of the previous summer's growth cut off each spring. Under this treatment dwarfs are everywhere successful. The side branches should not be removed higher than one foot from the ground in Dwarfs, while Standards may be trimmed to the height desired. Train in pyramidal form. Ripen the fruit in the house. Gather when, on gently lifting the fruit, the stem will readily separate from the limb. Place in a dark room until fully matured. Winter Pears may hang on the trees until there is danger from frost, then place in a dry cellar for maturing.

EARLY VARIETIES

Bartlett. Large, yellow, with a soft blush on the sunny side; flesh white, exceedingly fine-grained and buttery, sweet, very juicy, with a highly perfumed, vinous flavor. This is justly esteemed one of the very best Pears in cultivation; bears early and well. July and August.

Boykin's June. Below medium size; yellow with a reddish brown cheek; flesh white, sweet, not of high flavor, but its earliness and handsome appearance make it a desirable market variety; originated in Isle of Wight county, of this state. Season first to middle of July.

Clapp's Favorite. A first-rate early variety, which is rapidly growing into favor; resembles the Bartlett in appearance, but ripens a week or ten days earlier; one of the best native sorts; fruit large; skin smooth, yellowish green, becoming yellow, dotted and shaded with red next the sun; flesh yellowish white, juicy and melting; of very good quality. Last of July.



Early Harvest.

EARLY PEARS, continued

Comet, or Lawson. This Pear is now attracting a good deal of attention, and promises to be a profitable sort for the early market. The tree is a vigorous grower and very productive; fruit above medium size and of most beautiful crimson color on yellow ground; flesh crisp and pleasant, though not of best quality. Ripens early in July.

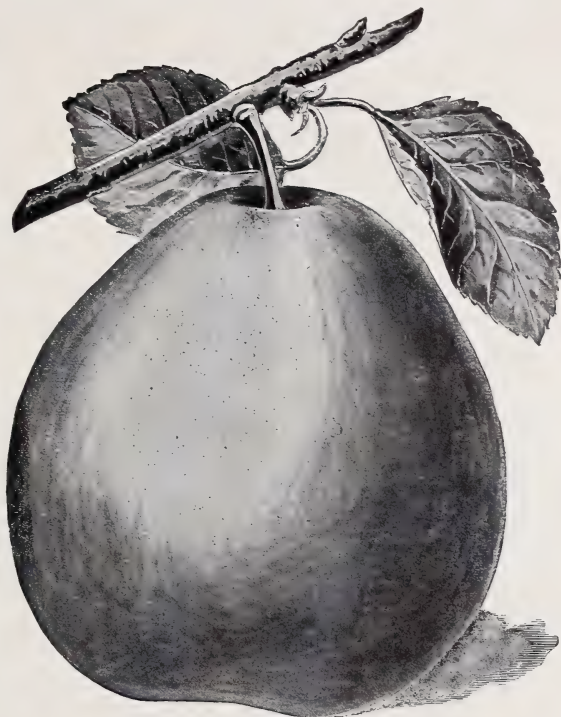
Early Harvest. This remarkable Pear is one that deserves to be universally planted. Tree is a very thrifty grower and good bearer; the very earliest of the large Pears; a month earlier than Clapp's or Bartlett. In the orchard and nursery the trees have been free from blight. (See cut, preceding page.)

Koonce. Tree a vigorous grower and a heavy and annual bearer. One of the earliest Pears of any size. We have not fruited it, but it comes highly recommended from southern Illinois. From samples received we do not class it as first quality, but its size and handsome appearance will make it sell as an early market Pear.

Le Conte. Supposed to be a hybrid between the old Chinese Sand Pear and a cultivated variety. Fruit large, pyriform; skin smooth. Tree of remarkable vigor and rapid growth; foliage luxuriant; has so far been nearly free from blight. Commences to bear early and is extremely prolific. Quality variable. Ripens a few days before Bartlett. Grown only as a standard.

Summer Doyenne. (Doyenne d'Ete.) Small; flesh white, melting, juicy, with a pleasant, sweet flavor. Tree a good grower and productive. One of the best very early Pears. First to middle of July.

Wildor. Disseminated by C. A. Green, Rochester, N. Y., and described as one of the earliest to ripen, about with Summer Doyenne and Alexander peach; not fruited South at this date. The following good points are claimed for it: Earliness, superior quality, does not rot at the core, handsome appearance and vigor of the tree.



Anjou.

SUMMER AND AUTUMN VARIETIES

Angouleme. (Duchesse d'Angouleme.)

Very large, dull greenish yellow, streaked and spotted with russet; flesh white, buttery and very juicy, with a rich and very excellent flavor. On young standard trees the fruit is variable, but on the quince, to which stock this variety seems well adapted, it is always fine. The large size and fine appearance of this fruit make it a general favorite. Sept. to Nov.

Anjou. (Beurre d'Anjou.) Large, greenish, sprinkled with russet, sometimes shaded with dull crimson; flesh whitish, buttery, melting, with a high, rich, vinous, excellent flavor. Very productive; succeeds well on the quince. Should be in every orchard. September to November.

Bessemanka. The new hardy Pear for extreme cold northwestern states; grown and fruited in Vermont with the thermometer at 40 degrees below zero; a

¹ For several years Hood's nursery stock has been coming into this part of the country, and orchards are now numerous from your nursery, and growers have no hesitancy in stating that they were well pleased when they received their stock, as they were fine stock, came in good shape, and when set to field were vigorous and healthy, and making rapid growth were soon in a bearing size, and invariably prove true to name. All are well pleased, and use no hesitancy in repeating their orders for more stock when in need of nursery stock."—A. J. ROBERTS, Lick Creek, Illinois, July 21, 1904.



Flemish Beauty.

SUMMER AND AUTUMN PEARS, continued
favorite. The fruit is medium in size, perfect pear-shaped, and nearly or quite seedless; flesh tender, juicy, mildly sub-acid, almost buttery, and very satisfactory for dessert use. The tree is a rapid, upright grower, with green foliage always free from rust or mildew. September.

Brignais. (Beurre de Brignais, Des Nonnes.) This very excellent Pear is of medium size, smooth, greenish, with numerous gray dots; flesh white, very juicy, sweet, melting and delicious; an early and abundant bearer. August and Sept.

Buffum. Medium size; yellow, with a broad reddish brown cheek, somewhat russeted; flesh white, buttery, sweet, and of excellent flavor; valuable for its fair fruit and fine bearing qualities. September and October.

Belle Lucrative. Above medium size; yellowish green; melting and fine; a good grower and bearer; does well on the quince; one of the very best Pears, and should be in every collection. August and September.

Flemish Beauty. Large; skin pale yellow, but mostly covered with marblings and patches of light russet, becoming reddish brown at maturity on the sunny side; flesh yellowish white, not fine-grained, but juicy, melting, saccharine and rich. In good soils and open situ-

ations the Flemish Beauty, when in perfection, is one of the most superb Pears; the tree is hardy and bears early and abundantly. September.

Frederick Clapp. Form nearly round; size above medium; skin thin, smooth and fair, clear lemon yellow; flesh fine-grained, very juicy and melting; flavor sprightly, acidulous, rich and aromatic; quality very good to best. September and October.

Garber's Hybrid. Tree an upright grower, with heavy dark green, glittering foliage, which is nearly or quite free from blight; fruit as yellow as an orange, larger than Kieffer, better in quality and four weeks earlier. September. Origin, Pennsylvania. Not fruited South.

Howell. Rather large; light waxen yellow, often with a finely shaded cheek, and covered with dots and patches of russet; flesh white, rather coarse and granular, with a rich, perfumed, aromatic flavor; a profuse bearer. August.

Japan Golden Russet. The tree is a luxuriant grower, with an abundance of thick, tough, leathery foliage, enabling it to endure great heat and drought without injury. Fruited with us this year in nursery row (two-year-old trees). It is an extremely early bearer, and bears enormously every year. Ripens in September.

"My orchard is considered one of the finest in the county, which fact is due to my having obtained the trees of you, through your agent, Capt. J. S. Coates. In traveling through the county, your stock can easily be distinguished by its thrifty appearance and quickness to produce fruit."—GEORGE W. STANLEY, Negro, Virginia, July 29, 1904.

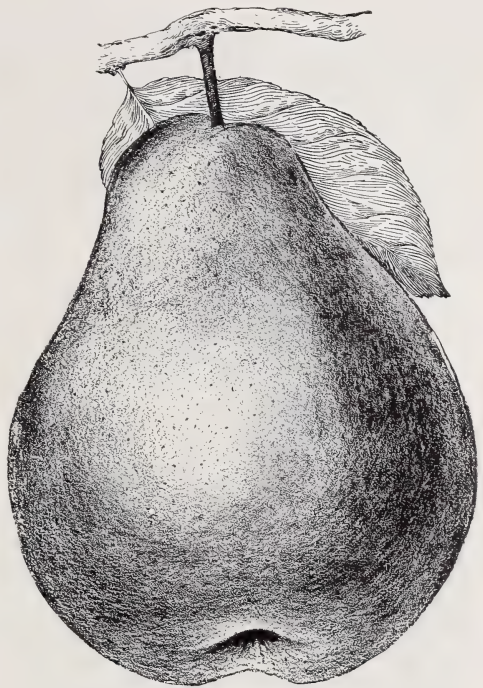
SUMMER AND AUTUMN PEARS, continued

Louise Bonne de Jersey. Large; pale yellowish green, with a brownish cheek; flesh yellowish white, very juicy, buttery, melting, rich, faintly subacid, fine. This variety is scarcely of the highest quality, but is eminently valuable for its large, fair fruit, free growth and great productiveness. September and October.

Rutter. Rather large; skin rough, greenish yellow, with some russet; flesh white, juicy, sweet and slightly vinous; very good; bears early and abundantly. September and October.

Seckel. Small; skin brownish green at first, becoming dull yellowish brown, with a lively russet-red cheek; flesh whitish, buttery, very juicy and melting, with a peculiarly rich, spicy flavor and aroma. This variety is pronounced by good judges as the richest and most exquisitely flavored known, and we may add to this that the tree is the healthiest and hardiest of all Pear trees, forming a compact and symmetrical head, and bearing regular and abundant crops at the ends of the branches. It ripens gradually from the middle of August to the middle of September.

Vermont Beauty. This most desirable of all dessert Pears is a hardy and vigorous grower, and almost entirely free from leaf-blight; it nearly equals the delicious Seckel in quality, is much handsomer, very prolific, and a good keeper. In form the fruit is of full medium size, obo-



Worden-Seckel.

vate, yellow, and covered on the sunny side with a bright carmine-red; the flesh is rich, juicy, aromatic, best. September.

Worden-Seckel. A seedling of the Seckel, equally as good in flavor and quality, but far superior in size, color and beauty. It is an upright grower, abundant bearer, and ripens a little later than Seckel. Originated in Oswego county, N. Y. Introduced by Smith, Powell & Co., Syracuse, N. Y.



Kieffer. (Half size.)

WINTER VARIETIES

Dewey's Premium. It originated at Marietta, Ohio, and the introducer, who is a fruit-grower well known in that section, claims that it is entirely blight-proof, hardy, and an annual bearer. A large, fine and showy fruit of no value. November to January.

Kieffer. Originated near Philadelphia, and supposed to be a cross between the Chinese Sand Pear and the Bartlett. Tree a very vigorous grower; an early and abundant bearer. Fruit medium to large; skin yellow, with a bright vermilion cheek; flesh brittle, very juicy, of good quality. Valuable for market or family

"Set trees out today. They are as fine as I ever saw, and am very much pleased with them."—W. S. EMBREY, Fredericksburg, Va., December 5, 1903.



Lawrence.

WINTER PEARS, continued

use; succeeds best as a standard. As a late fall Pear there is no variety as yet disseminated which has given such general satisfaction and profitable returns, trees four years after planting in orchard yielding as high as three bushels of perfect fruit.

Lawrence. Rather large; yellow, covered with brown dots; flesh whitish, slightly granular, somewhat buttery, with a very rich aromatic flavor; unsurpassed amongst the early winter Pears. Succeeds well on the quince; ripens with little care. Should be in every orchard. Tree healthy, hardy and productive. November and December.

Lincoln Coreless. Originated in Lincoln county, Tenn. It is said to be seedless or nearly so. The original tree is said to be about sixty years old, an annual bearer and free from blight. The quality of the fruit is excellent; when ripe the color is golden and flesh yellow. It is a winter variety and said to keep well until March.

President Drouard. This very promising variety was introduced by us from France some years ago, and our experience with it so far leads us to believe that it will prove to be the most valuable winter Pear for this section. Fruit large, often very large, handsome, and of very good quality. Tree hardy and a vigorous grower and an abundant bearer. October to January.

ADDITIONAL LIST

To aid the inexperienced in making their selections, we have carefully prepared the following lists—one for cultivation as Standards on Pear stocks, the other to be grown as Dwarfs on quince root. In both lists the varieties are put down about in their order of ripening. When one variety is found in both the Standard and Dwarf lists, it is understood that they do well either as Standard or Dwarf.

STANDARDS

Summer Doyenne	Le Conte	Flemish Beauty	Garber
Clapp's Favorite	Howell	Rutter	Kieffer
Bartlett	Belle Lucrative	Brignais	Lawrence
Vermont Beauty	Seckel	Buffum	President Drouard
Early Harvest			

In all lists we advise that one-half to three-quarters of Bartlett and Kieffer be planted.

DWARFS

Summer Doyenne	Buffum	Rutter	Lawrence
Howell	Angouleme	Anjou	President Drouard
Brignais			

And in all lists we advise one-half Angouleme.

"Seven or eight years ago I bought a lot of fruit trees from W. T. Hood & Co., and found them all true to name and fine fruit. If I ever need any more I want them from W. T. Hood & Co."—WALTER VINCENT, Dongola, Union Co., Ill.

"I consider your nursery stock far superior to any I have bought or seen in this locality. I have some trees from other concerns which do not compare with the ones I bought of you. Wishing you success, I remain, yours truly, JNO. W. POWERS, Isis, Va."



Select Peaches

The ease with which Peach trees may be cultivated, their comparative freedom from disease, the short period before they become productive, with the immense demand for the fruit and the facility with which it may be shipped to distant markets, make Peach growing extremely profitable.

We have the climate and opportunities to develop this fruit to the highest standard of excellence, and it should be a source of gratification to all that within the last few years so many valuable new varieties of merit have been introduced.

Owing to the greatly increased demand for the Peach, due to the development of the canning and evaporating interests, this fruit will no doubt continue to be exceedingly profitable to the orchardist who gives the business proper attention and has a suitable location for his orchard.

The grower in the southern states who has transportation facilities to market his fruit in the northern markets, we would advise to plant largely of the earliest varieties; they mature and can be marketed in New York before the fruit of Delaware and Maryland is ripe. In the New York market the early southern Peaches always command the highest prices. Those situated beyond the reach of convenient transportation should, after providing for their local markets, plant the best sorts for canning and evaporating purposes, as these have now become very important and profitable industries.

There is no fruit tree that makes so quick a return as the Peach. Give it reasonable attention, and in three years from planting a fair crop may be gathered; and the receipts from a good orchard are something of importance, there now being many Peach growers in Delaware and Maryland who realize from ten to twenty thousand dollars from that crop in favorable seasons, and yet they do not have the advantage of the high prices that may be obtained by the southern orchardist for his earlier crop, brought into the market before the competition that meets the Maryland and Delaware grower.

Our purpose is to grow the best trees—not the lowest-priced ones. Great care is necessary to preserve the health of the young trees before it is taken to the orchard. We, therefore, are careful to select the best seed, to use buds from healthy trees only, and we are confident that every tree will be true to name and just as represented by us. Fifteen or twenty sorts will give a succession through the season that would satisfy the most fastidious lover of this fruit, not only in a succession, but in a variety of sorts for all seasons.

Alexander. Fruit medium to large, bright color and of good quality; one of the favorite early market varieties.

Amelia. From South Carolina; very large and beautiful; white, nearly covered with crimson; flesh white, juicy, melting, sweet, rich, vinous; one of the best

Peaches for home consumption, but too tender for long transportation; freestone. Last of July.

Bilyeu's Late. Originated in Caroline county, Md., ripening after Smock Free and Salway; fruit of large size; color white, with a beautiful blush cheek; flesh white.



Carman.

SELECT PEACHES, continued

Beatrice. (Early Beatrice.) Small to medium size; deep mottled red; flesh melting, juicy, vinous and of good quality; blooms late and frequently bears when other varieties are destroyed by frosts; valuable for the latitude of Virginia and southward; bears transportation well. Early in July.

Belle of Georgia. Very large; skin white, with red cheek; flesh white, firm and of excellent flavor; the fruit is uniformly large and showy; tree a rapid grower and very prolific. Ripe July 1 to 15. New.

Bishop. Very large, crimson, white flesh; free; a valuable market sort; sure and prolific.

Bokara No. 3. The hardiest yellow Peach yet brought to notice; of fine quality and a heavy bearer; 30 per cent harder than any other kind.

Butler's Late. This magnificent new freestone Peach originated in the garden of J. T. Butler, Richmond, Va. Fruit of the very largest size; skin greenish white, with red cheek; flesh white, firm and of very good flavor; tree vigorous and very productive. September 15 to October 1.

Carman. In this new, hardy rot-proof Peach, ripening at the same time as Early Rivers, and yet almost as large and fine as Elberta itself, we have a Peach of great market value; a large, roundish Peach with a pale yellow skin, red blush on sunny side; white flesh, tender and melting; rich, sweet and of superior flavor; by far the finest of any Peach ripening ahead of Mountain Rose. A big, early, yellow-skinned Peach of high quality is sure to be in great demand. Don't miss the Carman!

Crawford's Early. A magnificent, large, yellow Peach of good quality. Its size and beauty make it one of the most popular orchard varieties. First of August.

Crawford's Late. Very large, roundish; skin yellow, with a beautiful dark red cheek; flesh rich, yellow, melting, with sweet luscious flavor. Worthy of universal cultivation as table and market sort. Middle of August.

Christiana. A new, very large, fine-looking yellow Peach, ripening between Crawford's Late and Smock; its large size, handsome appearance and time of ripening combine to make it a very valuable Peach.

SELECT PEACHES. continued

Chinese Cling. Fruit large, roundish, oval; skin transparent cream color, with marbling of red next to the sun; flesh creamy white, very juicy and melting, with a rich, agreeable flavor. Last of July.

Chinese Free. (China Strain.) Large, oblong; skin white, with red cheek; flesh red, firm and well-flavored; free from rot, which makes it a very desirable market variety. Ripens with Crawford's Early.

Chair's Choice. Originated in Anne Arundel county, Md.; fruit of very large size, yellow, with a red cheek; flesh yellow, firm and of good quality; tree a strong grower and a good bearer. Ripens just before Smock.

Caroline Beauty. This magnificent Peach originated in Caroline county, Virginia, and is a worthy competitor of the celebrated Heath Cling, being fully equal to it in flavor, much larger in size and has proved to be a preserving fruit of the first order. It has a yellowish white skin, with firm white flesh; large, roundish in shape; juicy, sweet and delicious; clingstone. Ripens about September 10.

Crosby. This new Peach, which originated in New England, is highly recommended on account of its hardness and bearing qualities. Fruit roundish in form, slightly flattened, with a distinct seam across the blossom end; color is bright yellow, with a red cheek; flesh yellow, sweet, juicy and rich. A freestone with a very small pit. Last of August. Ripens between Crawford's Early and Late.

Champion. It has been carefully tested for a series of years and proves itself a remarkably early Peach. It bears full crops when all other varieties fail, proving itself one of the hardiest Peaches known. It is also remarkable for size and good quality; skin is of a rich, creamy white, with a red cheek, exceedingly handsome; flesh creamy white, firm, sweet and delicious, rich and juicy; a perfect freestone. Ripens with Early Rivers and will supersede that popular variety when once known.

Connett's Southern Early. It has extra large fruit of a cream-white shade, having a beautiful blush next to the sun. It is one of the most delicately colored Peaches grown, and a clear freestone, with small seed. Of fine quality, and borne in profusion early in July upon trees noted for their strength and vigor.

Early Canada. Originated in the Province of Ontario; medium size, good quality and

handsome appearance. One of the earliest varieties, and nearer freestone than most of the early sorts.

Early Silver. Large; melting and rich, with the vinous flavor of the White Nectarine, its parent; ripens early in August.

Elberta. An exceedingly large, high-colored yellow Peach, a cross between Crawford's and Chinese Cling; juicy, well flavored; said to be probably the finest yellow freestone in existence. Ripens early in August.

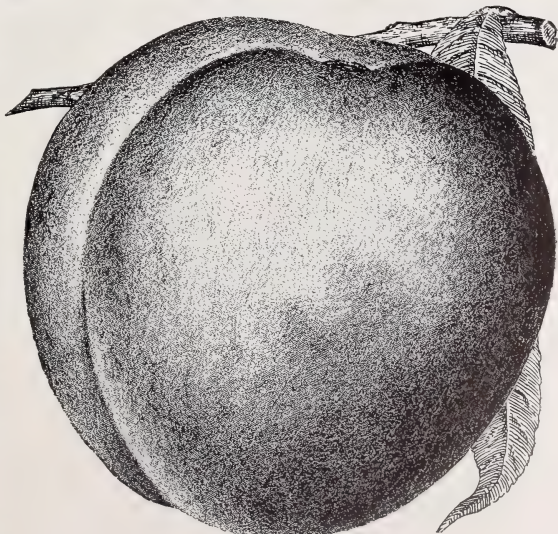
Emma. Fruit very large; skin golden yellow, with red cheek; flesh yellow, fine-grained, firm, juicy and highly flavored; tree luxuriant grower and quite prolific; a perfect freestone; one of our most attractive and profitable market varieties. Ripe July 25 to August 5.

Family Favorite. A seedling of Chinese Cling, originated in Texas; said to be large, handsome, certain and prolific; flesh white; valuable for shipping, canning or drying. Freestone; ripens about with Crawford's Early.

Foster. A new, very large Peach, resembling Crawford's Early in appearance, but larger and somewhat earlier; tree hardy and productive. August.

Fitzgerald. An improved Early Crawford, being fully equal to it in size, quality and color. In Canada and Michigan has proven one of the hardiest. Fruit large, brilliant color, bright yellow suffused with red; flesh deep yellow, best quality. Early September.

Geary's Hold-On. Large, yellow Peach, seedling of the Smock; fruit large; pale lemon-yellow. A little later than Smock.



Emma.

SELECT PEACHES, continued

Grand Admiral Cling. Full medium size; skin white, nearly covered with red; a very handsome and excellent Peach, and a good bearer. First of August.

Globe. An improvement upon Crawford's Late; vigorous and productive; fruit large globular, of a rich golden yellow, with red blush; flesh firm, juicy, yellow. Second week in September.

Golden Drop. Large, golden yellow, with a red cheek in the sun; flesh yellow, juicy, rich and very good. A promising variety. Tree very hardy and productive. Ripens between Hill's Chili and Smock.

Greensboro, New. Mr. J. Van Lindley, of North Carolina, says of this Peach: "While I was shipping Alexander, not one-third of which were ripe, I visited the original Greensboro tree. It certainly was a great surprise; the tree was loaded with fruit, colored beautifully with crimson, with yellowish cast; they were uniformly large, averaging more than double the size of Alexander. I was told that they had been ripening more than a week, and about every Peach on the tree was then ripe enough to ship, most of them getting soft. A Peach as large as common July Peaches, and beautifully colored; a freestone, ripening with Alexander. It was there before me in all its beauty, the greatest surprise I ever had; I could hardly realize it, seeing such a Peach at that season. The flesh was white, very juicy, and of excellent quality. I know of no Peach that will beat it."

Heath Cling. This is, perhaps, the very best of the late clingstone Peaches. Its very large size, beautiful appearance, high and luscious flavor, combined with its late maturity and the long time it may be kept after taking from the tree, renders it a most valuable sort for market. Fruit very large; skin pale yellowish white with a faint blush or tinge of red in the sun; flesh greenish white, very tender and melting; exceedingly juicy, with a sweet, rich, high and luscious flavor; tree hardy and vigorous. Middle of September.

Hill's Chili. Medium size; dull yellow; very hardy; a good bearer; highly esteemed as a market fruit. September.

Hynes' Surprise. True freestone when ripe; resists rot better than Hale's Early, which it resembles. Fruited with us this season—coming in just after Alexander. The best early Peach we have.

Jackson, or Red July. Origin, Richmond, Va. One of the largest early freestones; skin a beautiful rich red; flesh white,

very juicy, and separating entirely from the seed. Ripens after Alexander.

Jacques' Rareripe. Very large, deep yellow; highly esteemed where known; of excellent quality. Last of August.

Lady Ingold. A large, handsome, yellow freestone, ripening immediately after Hale's Early; resembles Crawford's Early in size and appearance; quality very good.

Large Early York. Is rather large and a beautiful Peach, well worthy a place in every good collection. The tree is vigorous and productive; fruit dotted with red in the shade, deep red cheek to the sun; flesh nearly white, fine-grained, very juicy, with a mild, rich, excellent flavor; a very valuable sort. July 25.

Large Red Rareripe. A most excellent Peach, ripening early in August. Fruit large; skin greenish white, dotted, and with a beautiful, rich, red cheek; flesh white, red at the stone, melting and juicy, with a sweet and rich flavor. We consider it one of our best.

Lemon Cling. A very large and beautiful lemon-shaped variety; light yellow, reddened in the sun; flesh firm, yellow, rich, with a vinous, subacid flavor; fine for preserving; tree very hardy and productive. Last of August.

Lemon Free. This magnificent yellow Peach originated in Summit county, Ohio. The name is very appropriate, as it is almost of lemon shape, being longer than broad, pointed at the apex; color a pale yellow when ripe. It is of large size, the finest specimens measuring over 12 inches in circumference; of excellent quality. Ripens after late Crawford. Is immensely productive.

Levy's Late. (Henrietta.) A new, late clingstone, which originated in the garden of W. W. Levy, Washington, D. C. Fruit large, roundish; skin deep yellow; a shade of rich brownish red in the sun; flesh deep yellow, rather firm, juicy, half-melting sweet; very good and a valuable variety. First to last of September.

Lorentz. (Per.) New. Its introducer says of it: "We have never known it to fail a crop in the most adverse seasons, and we believe it to be as nearly frost-proof as any variety yet introduced. It bears crops when others fail entirely. Fruit is unusually large and of a superior flavor, especially so for one so late in the season. It is a freestone, yellow-fleshed, and its handsome appearance has been a surprise to all who have seen it. Does not crack, is very firm, keeps well, and is a fine shipper."

"I received trees yesterday (December 2) in good shape. I am highly pleased with them; think they are fine. Want more in the spring."—T. L. Reeves, Rappahannock Academy, Va., December 3, 1903.



Fitzgerald. (See page 25.)

SELECT PEACHES, continued

Mathews' Beauty. A large yellow Peach of the Smock strain, but of good quality; very showy and a valuable shipper. Beginning of August.

Millhiser. The parent tree was grown by M. Millhiser, Richmond, Va.; a large freestone Peach, ripening about October 1, and very fine, but it has not been satisfactory on our grounds

Mountain Rose. A variety of very great value; very profitable for market, and is steadily growing in favor; fruit large, roundish; skin whitish, nearly covered with light and dark rich red; flesh white, slightly stained at the stone; juicy, sweet; separates freely from the stone. Ripens just after Troth's Early.

Oldmixon Freestone. Is a fine, large, productive variety, succeeding well in all localities and well deserving of the high favor in which it is held as an orchard variety; skin yellowish white, with a deep red cheek; flesh white, but red at the stone; tender, rich, excellent, indispensable. Middle of August.

Oldmixon Clingstone. Large, yellowish white, dotted with red on a red cheek; flesh pale white, very melting and juicy, with an exceedingly rich, luscious flavor; one of the most desirable clingstone Peaches. Middle of August.

Picquet's Late. This very valuable late Peach originated in Georgia and has been disseminated over a wide extent of country, and succeeds well generally. Fruit large and handsome; skin yellow, with a red cheek; flesh yellow, melting, sweet, and of the highest flavor. Ripens about with Smock.

Pendleton. A very large, rich, yellow Peach, double the size of the Heath Cling, and maturing from fifteen to twenty-five days later; unequaled in size, quality and flavor. For both canning and table use it equals the best of the September clingstones. Color rich deep yellow, slightly tinged with red; flesh yellow, tender, juicy, with a delicious flavor. Ripens at Richmond, Va., last of September. Origin, Richmond, Va.

SELECT PEACHES, continued

Rivers. (Early Rivers.) One of Rivers' seedlings, introduced from England; large, color pale straw, with a delicate pink cheek; flesh melting or rather dissolving, with a rich, racy flavor. Ripens ten days later than Early Beatrice. The best Peach of its season.

Red Cheek Melocoton. A famous old, well-known and popular variety, extensively cultivated as a market fruit; fruit large; skin yellow, with a deep red cheek; flesh red at the stone; juicy, with a good, rich, vinous flavor; productive; freestone. Middle of August.

Reeves' Favorite. Fruit large, roundish, with a fine red cheek; flesh deep yellow, red at stone; juicy, melting, with a good vinous flavor. One of the largest and handsomest Peaches; should be in every orchard. First of September.

Susquehanna. A very handsome and valuable Peach; originated on the banks of the Susquehanna river, in Pennsylvania; a great favorite wherever known; fruit of the largest size, sometimes measuring 12 inches in circumference; skin rich yellow, with a beautiful red cheek; flesh yellow, juicy, sweet, with a rich, vinous flavor; the best of all the yellow-fleshed Peaches; freestone; a moderate bearer. August 25.

Salway. A large, late yellow freestone of English origin; handsomely mottled, with a brownish red cheek; flesh deep yellow, juicy, melting, rich; very productive; a variety growing more and more in favor with the orchardists. Ripens after Smock Free.

Smock Free. Rather large; yellow, with a red cheek; flesh yellow, red at the stone; very productive; not of high excellence, but valuable as a market variety. In the Delaware and Maryland Peach-growing district this variety is planted perhaps more extensively than any other sort, and large profits have been realized from it. It succeeds well in Eastern Virginia, but west of the ridge is not so valuable. Middle to last of September.

Stump the World. Large; creamy white, with a bright red cheek; flesh white, juicy and high flavored; productive; one of the best market varieties. Ripens middle of August.

Sneed, or Peebles. The earliest Peach grown; medium to large; straw color, with red cheek; ripens eight days before Alexander; has matured its fruit where the above variety rotted on the same soil. Very hardy and seldom fails.

Tennessee Everbearing. W. T. Nichols, of Obion county, says of this variety: "The parent tree is said to have produced its first crop about 1888. The tree ripens fruit continuously from about August 1 to October 1. The best specimens on the parent tree at twelve years old measured 12 inches in circumference. Skin creamy white, with a deep blush in the sun; clingstone." A variety that will bear on one tree fruit for two months, having during all that time ripe fruit to be gathered, is one that every lover of fruit will desire on account of its novelty.

Thurber. Large; skin white, with light crimson mottlings; flesh very juicy, of exceedingly fine texture. A seedling of Chinese Cling, which it resembles in size and beauty, but perfectly free.

Troth's Early. A very early and excellent Peach of medium size; whitish, with a fine red cheek; flesh juicy, sweet and very good; one of the most popular and profitable varieties for early marketing. Middle of July.

Wheatland. An extensive fruit-grower says: "It is the largest, hardest, best, most productive and handsomest of its season—filling a gap just before Crawford's Late, which it excels. Though crowded on the tree the fruit was all large."

Waterloo. A seedling; originated in Waterloo, N. Y.; size medium to large, good specimens measuring 9 inches in circumference and weighing five ounces; form round, with a deep suture on one side; color pale, whitish green in the shade, marbled red, deepening into dark purple-crimson in the sun; flesh greenish white, with abundance of sweet, vinous juice; adheres considerably to the stone, like Hale's Amsden, etc. Ripens with Amsden.

Wonderful. Originated in New Jersey, described by the introducer; size large to very large, best specimens from crowded trees measuring 11 inches in circumference and weighing as many ounces; smooth, almost globular; very regular and uniform in size and shape; color rich golden yellow; flesh yellow, high-flavored, firm; very free. Ripens in October.

Yellow St. John. (Flater's St. John.) A large, roundish, yellow freestone, ripening a little before Troth's Early; skin orange-yellow, with a deep red cheek; flesh yellow, juicy, sweet and high-flavored.

"I find the trees bought of you, through your agent, Capt. J. S. Coates, satisfactory in every respect. Their thrifty and rapid growth and early bearing qualities are noticed and admired by all. I shall take pleasure in ordering any nursery stock I may need from you."—CLAYTON MOSS, Tyler, Va., July 29, 1904.

Select Plums

The Plum will grow vigorously in almost every part of this country, but it bears its finest and most abundant crops in heavy loams, or where there is considerable clay; it will bloom and set a fine crop in a sandy soil, but in such soils it generally falls a prey to the curculio, and drops prematurely. There are, however, some varieties that succeed very well in such situations.

The curculio, a small, brown insect, commences its depredations on this fruit as soon as it has attained the size of a pea, and continues its course of destruction until the crop is matured. It makes a small, crescent-shaped incision in the fruit, and lays its egg in the opening; the egg hatches into a worm, which feeds upon the fruit, causing it to fall prematurely. The only preventive that is known to succeed with any degree of certainty is to place a white sheet under the tree early in the morning, when cool, and by jarring the tree suddenly the insect falls upon the cloth, and, being stiff, can easily be caught. By commencing this as soon as the fruit is formed, and continuing it daily for about three weeks, you may be able to save a good crop.

Exemption may not be secured from black fungus or knot, but if branches affected are carefully removed and burned, and the wounds, caused by removal of branches, be well saturated with kerosene oil and the trees are given careful cultivation, the injury to the trees will not be great.

EUROPEAN AND NATIVE VARIETIES

Coe's Golden Drop. One of the largest, most beautiful and valuable of late Plums; light yellow; flesh yellow, firm, rich and sweet; adheres to the stone; productive. Last of August.

French Damson. A variety said to be better than Shropshire; has not fruited with us; purple.

German Prune. A valuable Plum of fair quality for the table, but most esteemed for drying and preserving; fruit long and oval; skin purple, with a thick blue bloom; flesh firm, green, sweet and pleasant; separates from the stone.

General Hand. Very large; skin deep golden yellow; flesh coarse, pale yellow; moderately juicy, sweet and good; tree grows vigorously and is very productive; separates from the stone. August.

Green Gage. Small, yellowish green; flesh pale green, melting, juicy, exceedingly sweet and rich. August.

Lombard. Medium size; skin delicate violet, dotted thick red; flesh deep yellow, juicy and pleasant; one of the hardiest, most productive and valuable Plums. Succeeds well everywhere, even on light soils. August.

Prince Englebert. Large; oblong, oval; skin very deep purple, sprinkled with brown dots and covered with a deep blue bloom; flesh yellowish green, juicy, sugary; separates from the stone; from Belgium; tree very vigorous; one of the best. July.

Reine Claude de Bavay. Large; greenish yellow, spotted with red; flesh rather firm, juicy, sugary, rich, of fine quality; adheres slightly to the stone; a vigorous grower, very productive, and a valuable addition to the late varieties. September.



Shipper's Pride. (See page 30.)

Shropshire Damson. An improvement on the common Damson, being of the largest size of its class; dark purple; highly esteemed for preserving; tree vigorous and enormously productive. September.

Spaulding. A fine grower, with large, rich dark foliage; fruit large, yellowish green; flesh firm, sweet and sprightly; said to be curculio-proof. Middle to last of August.

"I have been engaged with you for three years, as agent, and can say in all that time I have not found a dissatisfied customer. Your trees give entire satisfaction."—WM. D. MILES, Walcott, Arkansas, July 30, 1904.

EUROPEAN AND NATIVE PLUMS, continued

Shipper's Pride. Large, round, purple; very firm; excellent quality; a strong, upright grower and regular bearer; very productive.

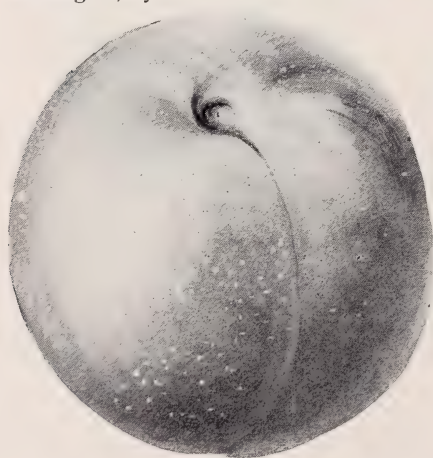
Wild Goose. Medium size; oblong; bright vermilion-red; juicy, sweet, and of good quality; cling; productive, and nearly proof against the curculio. The most profitable variety for market in the South, and deserves more extensive planting there as well as in the middle states. July.

Yellow Egg. A very popular fruit on account of its very large size and splendid appearance; its slight acidity renders it valuable for preserving; skin yellowish, covered with a white bloom; flesh yellow, adhering closely to the stone; rather acid until it becomes very ripe. Last of July.

JAPAN PLUMS

This class of fruit is attracting the attention of all fruit-growers, and is remarkable for its beauty, size, productiveness and early bearing. The trees often bear at two years in the nursery row, and we think this fruit will supersede the European varieties in this latitude and the South.

Abundance, or Botan. It is as near curculio-proof as can be expected. Fruit large and showy; color amber, turning to a rich cherry color, with a white bloom; flesh light yellow, juicy, tender, sweet and excellent; stone small and parts readily from the flesh. One of the best Plums for canning. July.



Hale.

Burbank. Fruit large, ranging from 5 to 5½ inches in circumference, nearly globular, clear cherry-red, with a thin lilac bloom; flesh a deep yellow, very sweet, with a peculiar and very agreeable flavor; tree vigorous, with large and rather broad leaves; commences to bear usually at two years old. Middle to the last of August.

Gold Plum. Fruit beautiful; a rich golden color, with deep red blush; good bearer and keeper; plant in dry, thin or clay soils.

Kelsey's Japan. Large to very large, heart-shaped; rich yellow, nearly overspread with bright red, with a delicate bloom; flesh firm, melting, rich and juicy, and remarkably small pit. We think it should only be planted South.

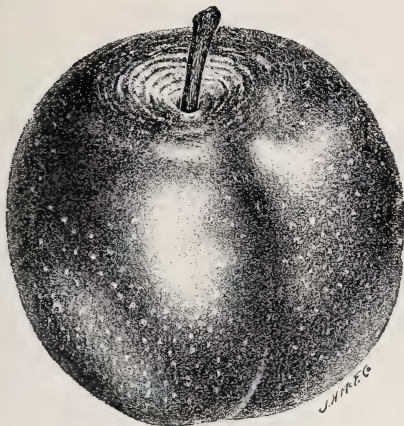
Hale. \$500 was paid for the control of the original tree. This is the latest and greatest production of Luther Burbank's genius, and presents some most unique and desirable special features. The tree is the most vigorous in growth of all the Japan Plums; fruit large; bright orange, mottled with cherry red; ripe in mid-September. Its season of ripening, great size and beauty will make it the most profitable of all Plums in market.

The Dixie. Earliest Sweet Plum. Very valuable. Not as rapid a grower as most Japan sorts, nor did it bear as young as is common with Japan varieties. Still it bears full crops and is a delicious Plum; not large, but handsome, and of first quality; sweet and delicious. Ripens here last of May, right along with Gandy strawberries. Stock limited.

Ogon. It is large, nearly round; of the brightest golden yellow; flesh firm, sweet, rich and dry; ripens a little earlier than Abundance or Botan, and is the most free of all Plums, as there is not a particle of flesh that adheres to the stone when broken or cut open. It seldom, if ever, fails to produce a large crop of fruit. The tree is vigorous and entirely hardy.

Red Damson. This is a valuable fruit, ripening later than Shropshire Damson. For jelly and preserves it has no superior among Damsons. It comes into bearing the second year after transplanting, and bears annually heavy crops. Have a tree that has borne every year for the past fifteen years; no room for more fruit on the tree every other year, and a fair crop the next ensuing. The tree is a strong, robust grower, making quite a large tree. When in bloom it is one mass of white flowers, without a leaf; later it is clothed with broad, dark green foliage. It is really a beautiful tree, free from black knot or any other disease.

"The trees that I bought of you were the finest I ever bought. They bore fruit this year. I would not buy of any other nursery. Trees were planted in 1902."—O. L. BRYANT, Dewdrop, Ala., July 31, 1904.



Burbank. (See preceding page.)

JAPAN PLUMS, continued

Red June. New. Fruit medium to large, cordate and very prominently elongated at the apex; suture deep, generally lopsided; deep vermilion-red all over, with a handsome bloom; very showy; flesh light lemon-yellow or whitish, firm and moderately juicy, not stringy, slightly subacid to sweetish; of good, pleasant quality; clinging to half; pit small. Tree vigorous and productive.

Satsuma Blood. A purple-fleshed Plum of very vigorous growth, with rank, dark green foliage; enormously productive of fruit; large; skin dark purplish red, mottled with bluish bloom; shape globular, or with a sharp point; flesh firm, juicy, dark red or blood color, well flavored, firm, quality very good; pit very little larger than a cherry-stone; fruits at two or three years of age. Considered by some to be the most valuable of Japan Plums. With us the trees have bloomed too early, and the past season is the only one in which they have fruited, while Botan and Ogon have fruited three out of four years.

Simon's (*Prunus Simonii*). This variety is from China. Perfectly hardy and very productive, commencing to bear when two or three years from the bud. Fruit deep rich red color, somewhat flattened, and has a little of the appearance of a dark red tomato, and with a peculiar aromatic flavor. We do not recommend this variety for market. The trees are very distinct,

growing upright like a Lombardy poplar. Middle of August.

Willard. Another new Japan Plum, similar in color and appearance to the Abundance, but ripens a month earlier; earlier than Wild Goose and the European varieties. Mr. Willard says: "The only thing to recommend it is its earliness."

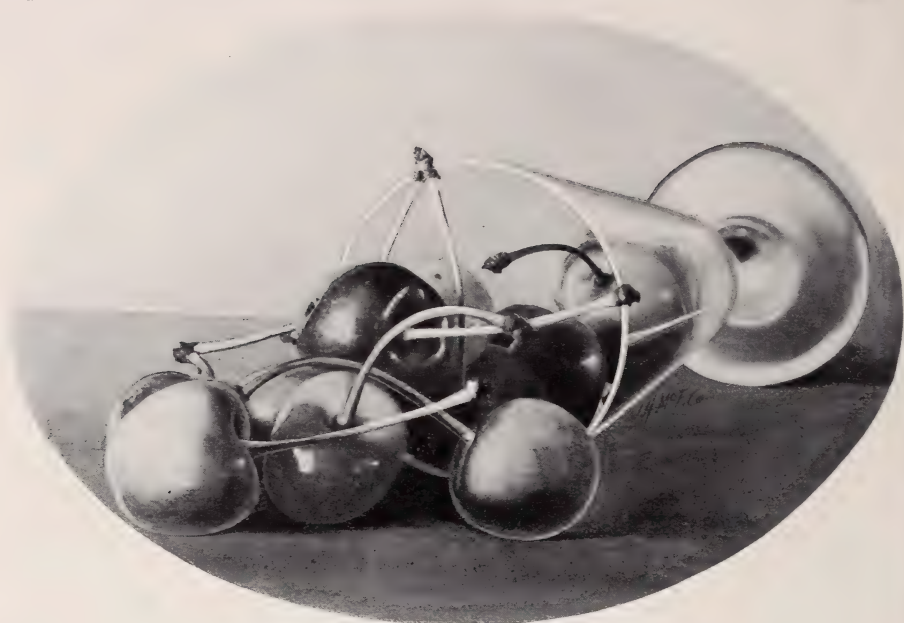
Wickson. New cross-breed Plum by Luther Burbank, which he sent out in the spring of 1895. Mr. Burbank says: "Among the many Japan Plums which I have fruited this one so far stands pre-eminent in its rare combination of good qualities. The tree grows in vase form, sturdy and upright, yet as gracefully branching as could be desired, and is productive to a fault. The fruit is evenly distributed all over the tree, and from the time it is half grown until a few days before ripening is of a pearly white color, but all at once soft pink shadings creep over it, and in a few days it has changed to a glowing carmine, with a heavy white bloom; the stone is small and the flesh is of fine texture, firm, sugary and delicious, and will keep two weeks or more after ripening, or can be picked when hard and white, and will color and ripen almost as well as if left on the tree."

Yellow Japan. Fruit large, nearly round; skin yellow, washed with red on sunny side; flesh yellow, juicy and of good quality; tree vigorous, resembling Kelsey in growth, but with larger leaves. It is named Yellow Japan, although a red Plum.



Wickson.

"I have been selling your nursery stock for five or six years and can truthfully say that your trees are first-class. I sell to the same people every season, if they need trees. People say that your trees are the best that have ever been sold. I bought 175 pear trees in the fall of 1903; they are all fine. Several nurserymen have written me and tried to secure my services. I have, however, decided to 'let well enough alone' and declined their offers. I expect to stay with the Old Dominion."—H. A. LIVSEY, Frankford, West Virginia, July 16, 1904.



Napoleon Bigarreau. (See opposite page.)

Select Cherries

The Cherry succeeds on most soils and in nearly all localities throughout this country, but attains its greatest perfection upon those of a light, gravelly or sandy nature, provided it be in good condition. In planting the Hearts and Bigarreaus, avoid wet or damp situations. The Dukes and Morellos will bear more moisture, but will flourish best in a soil that grows the others to the greatest perfection.

HEART AND BIGARREAU

Bigarreau, or Graffion. (Yellow Spanish.) Very large, often an inch in diameter; pale yellow, with a handsome, light red cheek to the sun; flesh firm, with a fine, rich flavor. This variety, though not of the highest excellence, has become, from its great size, beauty and productiveness, a general favorite. July.

Black Tartarian. Very large, purplish black; half tender; flavor mild and pleasant; tree a remarkably vigorous, erect and beautiful grower and an immense bearer. June.

Black Heart. Rather above medium size; flesh tender, juicy, with a rich, sweet flavor; very productive. June.

Belle D'Orleans. A foreign variety; fruit of medium size; color whitish yellow, half covered with pale red; flesh tender, very juicy, sweet and excellent; tree vigorous and productive; a valuable early Cherry. May.

Coe's Transparent. Medium size; pale amber, red and mottled next the sun,

tender, sweet and fine; one of the best; tree vigorous and erect. Beginning of June.

Downer's Late Red. Rather large, light red, tender and juicy, slightly bitter before fully ripe. Tree a vigorous, erect grower and very productive. One of the best late Cherries.

Elton. Large, pointed; pale yellow, nearly covered with light red; half tender, juicy, rich and delicious; tree very vigorous, spreading and irregular. May and June.

Early Purple. An exceedingly early variety, ripening in May; fruit of medium size; color dark red, becoming purple at maturity; flesh purple, tender, juicy, with a rich and sweet flavor; indispensable as an early variety; productive.

Florence. Fruit very large, amber yellow, marbled and mostly covered with bright red; flesh amber color, very firm, sweet, rich flavor; hangs long on the tree, and will keep several days after gathering. Ripens in July.

HEART AND BIGARREAU CHERRIES, con.

Governor Wood. One of the best of Dr. Kirkland's seedlings, and deserves a place in every good collection; fruit large, skin light yellow, shaded with bright red; flesh nearly tender, juicy, sweet, rich and delicious; tree vigorous and productive. June.

Knight's Early Black. Large, black; a very juicy, tender and excellent early kind; tree quite vigorous and a good bearer. Middle of June.

Napoleon Bigarreau. A magnificent Cherry of the largest size; pale yellow, with a bright red cheek; flesh very firm, juicy and sweet; tree a vigorous, erect grower, and bears enormous crops. Profitable for marketing. June.

Rockport Bigarreau. Large, deep brilliant red; flesh rather firm, juicy, sweet, rich, with an excellent flavor; a very desirable and profitable Cherry. Beginning of June.

Schmidt's Bigarreau. This noble Cherry was introduced into England from Belgium by Mr. Rivers, and is by far the largest of all black Bigarreau Cherries. Fruit grows in clusters and is of large size, round and somewhat oblate; the skin is of a deep black color; flesh dark, tender, very juicy, with a fine, rich flavor. The stone is very small for the size of the fruit.

Windsor. The tree is vigorous, hardy and an early and good bearer; the Cherries are obtuse heart-shaped, dark purple or nearly black, the flesh quite firm, fine in texture and rich in flavor; ripens early.

DUKE AND MORELLO

The Dukes and Morellos are not so vigorous and upright in their growth as the Hearts and Bigarreus, forming low, spreading heads, with acid or subacid fruit.

Dyehouse. In hardiness and general appearance resembles Early Richmond, but is of finer quality and several days earlier; it produces very regular annual crops; fruit medium; skin bright red, darkened in the sun; flesh soft, juicy, tender, sprightly subacid, rather rich; partakes of both the Morello and Duke in growth, wood and fruit; it is very productive. We consider it superior to Early Richmond.

English Morello. Above medium size; skin dark red, becoming nearly black; flesh juicy, subacid, rich. July.

Early Richmond, or Kentish. Medium size, red; flesh melting, juicy, and, at

maturity, of a rich acid flavor; very productive; fine for cooking. Commences ripening last of May and hangs long on the tree.

Late Duke. Large; light red; flesh pale amber, subacid; desirable as a late Cherry; productive. Ripens gradually from the middle to the last of July.

May Duke. Medium size; dark red; melting, rich and juicy; an old and popular sort; ripens after Early Purple Guigne.

Montmorency Large-fruited. Fruit large and the finest flavored of any in this class; tree a very free grower, hardy and prolific.

Montmorency Ordinaire. A beautiful, large red, acid Cherry; larger than Early Richmond and fully ten days later; very prolific and hardy; a variety of great value; tree a free grower.

Olivet. Large, very shining, deep red, tender, rich and vinous, with a very sweet, subacid flavor. It ripens in May or early June.

Ostheim. (Russian.) Rather slender grower; very hardy; fruit of good size and quality; trees are very productive.

Reine Hortense. A French Cherry of great excellence; large; bright red; flesh tender, juicy, very slightly subacid and delicious; tree vigorous and productive; one of the very best Cherries. Last of June.

Wragg. Supposed to hail from North Germany; a good grower and an immense bearer; quite late and a valuable Cherry.

**Early Richmond.**

"Shipment (1,000 Elbertas) received. It was the prettiest lot of trees ever received by me."—J. R. CANTELOU, Montgomery, Ala., March 31, 1904.

SELECT APRICOTS

This beautiful and excellent fruit needs only to be known to be appreciated. It ripens a month or more before the best early peaches and partakes largely of their luscious flavor. The tree is even more hardy than the Peach and requires about the same treatment. To make a crop more certain, plant on the north or west side of a wall, fence or building.

Breda. Small, round; dull orange in the sun; flesh orange colored, juicy, rich, vinous and high-flavored; tree very hardy and productive. July.

Early Golden. (Dubois' Early Golden.) Small; pale orange; flesh orange, juicy and sweet; tree hardy and productive. Last of June.

Large Early. Large size; orange, with a red cheek; flesh sweet, rich and juicy; separates from the stone; tree vigorous and productive; one of the very best of the early sorts. Last of June.

Moorpark. One of the largest and finest Apricots; yellow, with a red cheek; flesh rather firm, orange, parting from the stone; sweet, juicy and rich, with a luscious flavor. July.

Peach. Very large; yellowish orange,

and mottled with dark brown to the sun; flesh rich yellow, juicy, with a rich, high flavor; productive. First of July.

IMPROVED RUSSIAN VARIETIES

Alexander. An immense bearer; fruit of large size; oblong; yellow, flecked with red; flavor sweet and delicious; tree hardy; one of the best. July 1.

Alexis. Large to very large; yellow with red cheek; slightly acid, but rich and luscious; tree hardy and abundant bearer. July 15.

J. L. Budd. A hardy, strong grower and profuse bearer; large white, with red cheek; sweet, juicy, extra fine, with a sweet kernel as fine-flavored as the almond; the best late variety and a decided acquisition. August.

SELECT NECTARINES

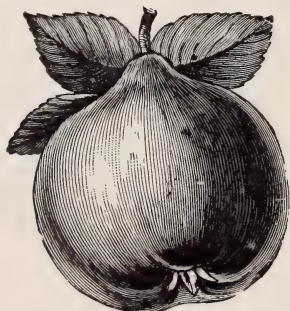
The Nectarine requires the same culture, soil and management as the peach, from which it differs only in having a smooth skin, like the plum.

SELECT QUINCES

The Quince is attracting a great deal of attention as a market fruit. Scarcely any fruit will pay better in the orchard. The tree is hardy and compact in growth, requires but little space, productive, gives regular crops, and comes early into bearing. The fruit is much sought after for canning for winter use. When put up in the proportion of about one quart of Quinces to four of other fruit it imparts to them a most delicious flavor.

It flourishes in any good garden soil, which should be kept mellow and well enriched. Prune off all the dead and surplus branches, and thin out the fruit if bearing too freely.

Champion. This variety originated in Georgetown, Conn.; said to be larger than the Orange; fair, smooth, of fine quality and a late keeper.



Champion Quince.

Meech's Prolific. A new variety recently introduced by Rev. W. W. Meech, of Vineland, N. J. The late Charles Downing says: "It is certainly a promising variety, and if it proves as good in other localities, and continues its present good qualities of fair fruit and good size as the specimens you sent me, it will be an acquisition to the Quince family."

Orange, or Apple. Large, roundish, with a short neck; color light yellow; tree very productive; this is the most popular variety in the country; a great bearer. Ripens in October.

Rea. (Rea's Seedling.) A variety of the Orange Quince, one-third larger, of the same form and color, fair, handsome; a strong grower, of good quality, and bears well.

MULBERRIES

This fruit is getting very popular, especially South, where it is fine food for hogs and poultry. The trees are also fine for shade, as it grows rapidly and is very hardy.

Downing's Black. Fruit very large, black and subacid; mostly planted North. Fruit about June 1 to middle of July.

Hicks', or Everbearing Black. This variety is very popular South, as the tree is a very rapid grower, bears very young and has a long season, very often from June 1 until the middle of August. Very sweet.

New American. This we consider equal to Downing's in all respects, continuing in bearing fully as long and a hardier tree. Fruit jet-black.

Russian. Brought from Russia by the Mennonites. Tree a very hardy and rapid grower; fine as a shade tree; bears very young and very heavily, but the fruit is of very little value.

Teas' Weeping. Forms a perfect umbrella-shaped head, with long, slender branches drooping to the ground, parallel to the stem; very hardy. One of the prettiest small weeping trees. Admirably adapted to lawn planting.

White English. Fruit very small and sweet, but not as good as Hicks'.

JAPANESE PERSIMMON

In our last edition we did not recommend this fruit. At that time they were most all imported from Japan, and the trees were very rough and unsatisfactory to deliver and sold at a very high price. Since then we have been buying strong one-year-olds from the South and transplanting in our nurseries, and where sold have been very satisfactory. We do not advise planting for our latitude, except in protected places, and the ground should be well manured in the fall several feet around the tree. If there should be a very hard winter, and they should be killed back, they will sprout up from the ground, and with care will make satisfactory trees, although there will be no trouble where the thermometer does not fall below zero. There is a tree at Baltimore that has been planted from ten to twelve years, and is over 12 feet high, that has been bearing annual crops ever since the second year of planting. The tree last fall was as full as we have ever seen an apple tree with apples. One cluster, not over 12 inches in length, which W. T. Hood took from the tree, had twelve as large as hen eggs.

Among, or Yemon. (Name of a Japanese ornament.) Round, flattened, deeply ribbed; dark orange-red and sometimes yellowish red; $2\frac{1}{2}$ to 3 inches in diameter; average weight 6 ounces, and occasionally a specimen weighing 16 ounces is produced; very sweet; flesh red, and is edible while still solid, but quality improves as it becomes soft. Maturity September to end of November. Tree of moderate height.

Hiyakume. (Weights 100 "me," a unit of Japanese weight.) This is perhaps the most desirable of all the round, red-fleshed varieties, and as the fruit affects various shapes, it is known under many names, such as Pound, Tane-nashi, or Seedless, etc.

Yedo-Ichi. (No. 1, or best in Yedo, latter being the old name of Tokio.) Syn., Maru-Gata (round shape). Medium, round, some specimens slightly oblong, flattened at base and narrowing at apex; skin dark red, often with black mottlings near apex; flesh mahogany brown, with darker spots, brittle and is edible while solid as early as October 1; very prolific and bears fruit in large clusters. Tree an upright grower.

Zenji, or Zingi. (Name of Japanese villages.) Small, $1\frac{3}{4} \times 2$ inches; weighs 3 to 4 ounces; flesh dark brown, with darker spots; very sweet; edible as early as middle of September, while still solid, and lasts throughout October. One of the most desirable.

"I have had seventeen years' experience in trying your nursery stock. It has been fully tried and I find none to equal it. Too much cannot be said in favor of the stock sent out by you."—J. M. ROBINSON, Woodford, S. C., July 19, 1904.

"Having handled your stock for six years and being thrown in contact with agents and nursery stock from other concerns, I can conscientiously say that none can compare with your trees, either in grade or prices. Trees sent out by you are now in bearing in Princess Anne and Norfolk counties, Virginia, and Currituck county, North Carolina, and purchasers are satisfied in every particular."—REV. W. S. MERCER, Norfolk, Va., July 19, 1904.

"I have purchased through your agent, Mr. T. W. S. Foley, two lots of stock, and I want to say that the same has been satisfactory in every respect. I used to think, and have often heard the remark made, that stock brought from the South to this climate would not thrive. I have found that this is all a mistake, and I would not purchase stock from any one else."—T. E. SHILLINGBURG, Gorman, W. Va., July 26, 1904.

Select Grapes

The vine comes quickly into bearing, yielding fruit usually the third year after planting, but sometimes on the second; requires but little space, and when properly trained is an ornament to the yard, garden or vineyard.

It is stated by some of the most eminent physiologists that among all the fruits conducive to regularity, health and vigor in the human system, the Grape ranks number one. We hope soon to see the day when every family shall have an abundant supply of this excellent fruit for at least six months in the year.

The soil for the Grape should be dry; when not naturally so should be thoroughly drained. It should be deeply worked and well manured, always bearing in mind that it is an essential point to secure a warm, sunny exposure.

The best Grape-vine trellis is probably the wire trellis. This is constructed by planting posts as far apart as you choose to have the length of your trellis; stretch the wires, four in number, about eighteen inches apart, letting them pass through stakes at proper distances from each other to support the wire. As the wires are contracted by the cold, and are likely to break or sway the posts from their places, they should be loosened as cold weather approaches. When, however, it is not convenient to make a wire or other trellis, very good results are had with the old vineyard system of training to stakes. The vines are planted 8 feet apart, in a place exposed to the sun and protected from cold winds, if convenient, and are trained to an upright stake. This method is as simple as the cultivation of Indian corn. Often a large and uncomely rock may be converted to usefulness and beauty by planting a Grape-vine on its sunny side, and making use of the rock as a trellis.

To secure the best results, annual and careful pruning is essential. The following is regarded as the best method: Commencing with a good, strong vine, such as we furnish, permit it to grow the first season without pruning. In November or December following cut back the growth, allowing but three or four buds to remain. The following spring allow but two of the strongest buds to throw out shoots. These, in the fall, will be from 7 to 10 feet long, and should be cut back to within 4 or 5 feet of the root. The next spring the vine should be fastened to the lower part of the trellis. When growth commences, pinch the buds off, so that the shoots will be from 10 to 12 inches apart. As these grow, train them perpendicularly to the second, third and fourth bars of the trellis. No fruit should be allowed to set above the second bar of the trellis.

During the season when the shoots have reached the upper part of the trellis they may be pinched, to prevent further growth. After the fruit is gathered and the vine has shed its foliage, the cane should then be cut back to two buds. The following spring allow but one bud to throw out a shoot, and treat as in the previous year. This system of pruning should be followed each year. After the vine has undergone the fall pruning it may be laid upon the ground and covered with boughs, to protect it through the winter. Grape-vines should be top-dressed in the spring.

Grapes may be kept through the winter, and even all the year, in small boxes holding three to five pounds, if placed in a cool, dry room, of even temperature, or they may be spread out to dry for two days and then laid in market baskets, and suspended in a cool, dry cellar.

Few things pay better than a good vineyard. In 1879 the Richmond Nursery planted one and one-quarter acres of Concord. In 1881 these vines bore a fair crop, which increased each year until, in 1884, the sales from the one and one-quarter acres, at the low price of three cents per pound, gave a net profit of \$400. We could give other similar instances which show the enormous profits in Grape-growing.

The following list contains the best known sorts of the hardy American varieties:

Agawam. (Rogers' No. 15.) Bunch large and compact; berries large, dark red; flesh tender, juicy and rich; one of the best of Rogers' Hybrids.

Brighton. Bunch large, rather irregular; berries above medium, round, dark red; quality best. Ripens early.

Campbell's Early. Vine strong, vigorous and very productive; clusters large and perfect; berries large, black, with a perfect bloom; skin thin; an admirable keeper and shipper; flavor rich, sweet, slightly vinous. In dessert quality it is unrivaled. Early September.

"In regard to your nursery stock, I must say that it is very fine. Every one of my customers give it great praise. They say your stock is larger and better grown, and shipped in better condition than any other nurseryman's they have ever seen. My customers say they never expect to purchase of any other nursery if they can get your trees. I am proud to say I have been with you fourteen years, and hope it may be so I can continue with you."—T. W. S. FOLEY, Mt. Storm, W. Va., July 18, 1904.

SELECT GRAPES, continued

Concord. There is no Grape in the catalogue so popular or planted so extensively as this. It succeeds well in almost all parts of the country, and although of northern origin, it is better here than in its native place. Vine a very vigorous grower and enormously productive; comparatively free from disease; bunches large, compact; berries large, round, black, with a blue bloom; a profitable market sort.

Catawba. Bunches and berries large; skin pale red; flesh juicy, sweet and highly aromatic; vine productive. September.

Clinton. Bunches small and compact; berries small, sprightly; when thoroughly ripe is a good table Grape and keeps well. Valuable for wine. A free, rapid grower and profuse bearer; good keeper.

Delaware. This Grape is now so well known as to need no commendation. Its earliness, hardness and admirable sweetness have become too well known to the public to demand more said in its behalf; bunches medium size, compact; berries rather small; skin of a beautiful light red color; exceedingly sweet, sprightly, vinous and aromatic. Ripens in August.

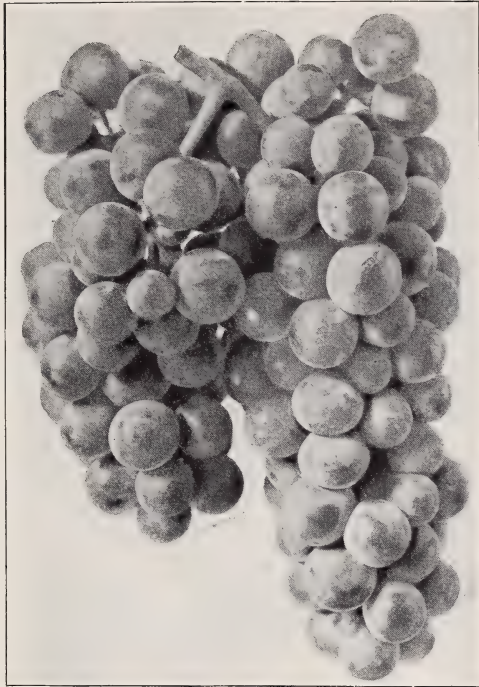
Duchess. A new seedling from Ulster county, New York. Bunch medium to large, shouldered, compact; berries medium, round, greenish white; skin thin; flesh tender, without pulp; sprightly and rich.

Empire State. Another new white Grape of great promise; bunch large-shouldered; berry medium; skin slightly tinged with yellow; flesh tender, rich, juicy, sweet and sprightly; ripens a little after Hartford; vine a good grower and productive.

Eaton. Bunch large, compact; berries very large, round, black, covered with a thick blue bloom. In general appearance it resembles Moore's Early. Skin thick; juicy, with pulp. A large, showy Grape.

Hartford. A very popular and profitable early Grape; a vigorous grower and a good bearer; free from disease; fruit medium size, black; flesh sweet and soft. Early in August.

Ives. Bunch medium to large, sometimes shouldered, compact; berries medium, black; flesh sweet, pulpy and somewhat foxy; should hang some time on vine after it colors; hardy, vigorous, and bears well; deservedly becoming popular. Early.



Campbell's Early. (See preceding page.)

James. Berry of large size and good quality, black; vine very prolific. Commences to ripen about the first of August and continues till frost.

Jefferson. This is a magnificent Grape, but further trial must establish its worth. It is said to mildew badly in some localities; bunch large; very red. Late.

Lady. Originated in Ohio. Bunch medium size; berry about the size of Concord; light greenish yellow, covered with white bloom; flesh tender, sweet and pleasant. Early.

Lady Washington. Bunch very large, compact, generally double shouldered; berry medium to large; color deep yellow, with a tinge of delicate pink where exposed to the sun, and covered with a thin white bloom; flesh soft, tender, juicy, sweet and very good. It ripens about with Concord.

Martha. This is one of the most reliable white Grapes yet known; bunch medium, compact, shouldered; berry white or greenish, turning to pale yellow when fully ripe; skin thin; flesh very sweet and juicy; a seedling of the Concord, and will take the same rank amongst white Grapes that its parent does amongst the black. A little earlier than Concord.

SELECT GRAPES, continued

Moyer. Originated in Lincoln county, Ontario, Canada, and seems to be a cross between the Delaware and some purely native variety. It ripens with the very earliest varieties, some three weeks before the Concord; not quite as high flavored, and without a trace of foxiness; very juicy and tender to the center; skin thin but tough, to which characteristic, in part, it owes its good keeping, handling and shipping qualities; bunches medium, about the same as Delaware, shouldered; the berries are a little larger and adhere tenaciously to the stem. The color is a rich dark red, even better than that of the Delaware. This Grape is sweet, tender, and good as soon as colored; very hardy, having stood 35 degrees below zero unprotected and unhurt. Neither the leaf nor fruit has ever been known to mildew, not even in seasons and places where everything around it was affected.

Moore's Diamond. A pure native; bunch large, compact; berry medium size; color greenish white, with a yellow tinge when fully ripe; flesh juicy, almost without pulp; quality very good; vine vigorous and productive.

Moore's Early. A seedling of the Concord, combining the vigor, health and

productiveness of its parent, and ripening a few days earlier than the Hartford; bunch medium; berry quite large; color black, with heavy blue bloom. Its extreme hardness and size will render it a popular market sort.

Niagara. No Grape has been so strongly presented for public favor as this, and for a while it seemed as though it would merit all the praise bestowed upon it. The vine is remarkably vigorous and productive; bunch large, generally shouldered; berry large, roundish; color greenish white, turning to light yellow; skin thin but tough; flesh slightly pulpy, tender and sweet; has a decidedly foxy flavor before fully ripe, which it pretty well loses at maturity. Ripens with Concord. In some vineyards it has suffered greatly from rot, and we are afraid this is a weakness that will be developed with age, but where it succeeds it will unquestionably be a very valuable sort.

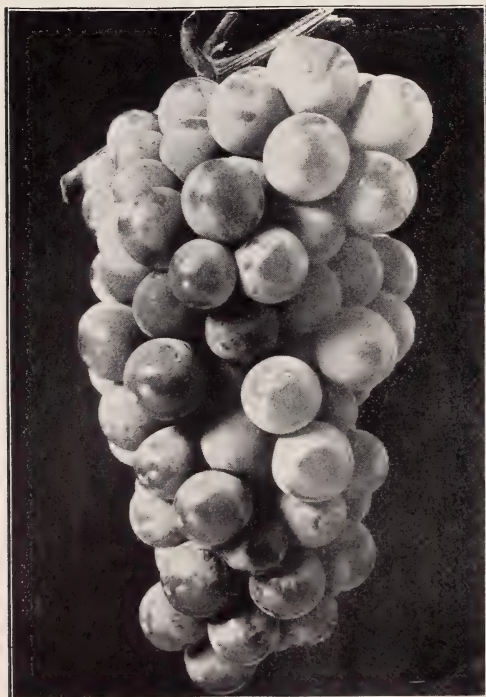
Pocklington. A seedling of the Concord. Vine very hardy, healthy and productive; bunch large, generally shouldered; berry light golden yellow when fully ripe, quality good; ripens rather early. It is a good keeper and bears shipping well. It will probably take its place as a valuable standard Grape, being the largest and most showy white Grape of its type yet introduced.

Scuppernong. A southern Grape, too tender for a more northern latitude than Virginia; does not even succeed in Virginia much above the tide-water line, but southward it is quite hardy and valuable; vine a vigorous grower; requires no pruning; bunch small, loose, not often containing more than six berries; fruit large, round; skin thick, light green; flesh pulpy, juicy, sweet; produces enormous crops. Continues in season about six weeks.

Salem. (Rogers' No. 22.) Bunch and berry large; of a light chestnut color; skin thin; flesh tender; very sweet and sprightly, with a rich, aromatic flavor; vine vigorous and productive; ripens before Concord. One of the best and most popular of Rogers' Hybrids.

Wilder. (Rogers' No. 4.) Bunch and berry large; black; pulp tender; juicy, rich and sweet; vigorous and productive. Ripens with Concord.

Worden. Said to be a seedling of Concord, and is a slight improvement on that variety; ripens a few days earlier; bunch large and compact; berry large, black and of good quality; vine vigorous and productive.



Niagara.



North Star Currants.

Small Fruits

The small fruits, such as Strawberries, Raspberries, Blackberries, Gooseberries, Currants, etc., ripening from the first of June till fall, are everywhere capable of successful cultivation, and yield large returns at comparatively small expense. They should have a place in every garden. Since the introduction of self-sealing jars and cans, they can be had throughout the year almost as fresh as when gathered.

SELECT CURRANTS

Black Naples. Very large; black; valuable for jams and jellies; has a strong, musky odor.

Cherry. Very large; red; strong grower and moderately productive; fine for preserving, and a valuable market variety.

Fay's Prolific. This Currant has now been before the public a number of years, and we believe has pretty well sustained the claims of its disseminator, who says of it: "Color rich red; as compared with the Cherry Currant, Fay's Prolific is equal in size, better in flavor, containing less acid, and five times as prolific, and from its long, peculiar stem, less expensive to pick."

La Versailles. One of the largest and best Currants; an enormous bearer; red; flavor good; very similar to Cherry.

Lee's Prolific. A black variety of recent introduction, and perhaps the best of its class; earlier than Black Naples, with the

peculiar musky flavor of that variety; fruit large; very prolific.

North Star. This new Currant is of remarkably vigorous growth and wonderfully prolific; the stems of fruit thickly set average 4 inches in length. The fruit is very sweet and rich, a fine dessert fruit and unequaled for jelly. It is extremely hardy; bears early.

Pomona. Is a strong grower; hardy and very productive. Colored and very sweet; few and very small seeds. A very valuable sort.

Red Dutch. Larger than the common red and clusters much larger, and less acid; one of the best red Currants.

Victoria. A late variety, of rather large size; red; bunch long; productive.

White Grape. The best white Currant; bunch moderately long; berries large; very productive; less acid than the red Currants; fine for table.

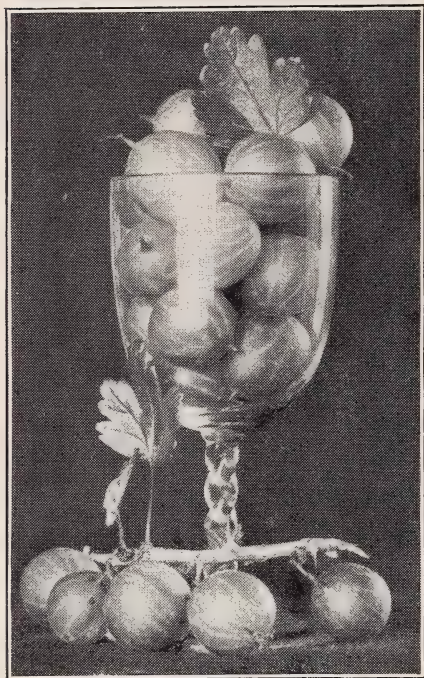
White Dutch. Rather large; white; good.

"Thinking you would like to know how my orchard is coming on, I will just say to you, and to whom this may concern, I have bought of W. T. Hood & Co., through Mr. J. R. Christ, their agent, a big bill of fruit trees, which has thoroughly proven the best stock I ever saw. Their trees are not only well pruned, but well branched, well rooted and of a nice thrifty growth, and the fruit is of the finest quality. I shall always plant W. T. Hood & Co.'s trees in preference to any others."—BENTON TANKERSLEY, East Lexington, Va., July 23, 1904.

GOOSEBERRIES

Until quite recently no interest has been felt in the cultivation of this fruit further than to grow a meager supply for home consumption, yet there are few crops that will yield as satisfactory returns; certainly none more certain with so little expense in cultivation.

Chautauqua. A supposed cross between the American and English varieties; is not so subject to mildew as the English



Gooseberries.

type. Bush stout and vigorous, having the usual complement of thorns; foliage large, glossy, dark green; berries large, often 1 to 1½ inches long; color pale yellow; sweet, but rather thin-skinned; very productive.

Downing. A seedling of the Houghton; an upright, vigorous-growing plant; fruit larger than its parent; color whitish green; flesh rather soft, juicy, very good; productive. Valuable market sort.

Houghton's Seedling. Rather small; pale red; flesh tender, juicy, sweet and pleasant; produces enormous crops; free from mildew. Most profitable market variety.

Red Jacket. As large as the largest. Berry smooth; very prolific and hardy; quality and foliage the best. For seven years it has stood close to Triumph, Crown Bob, White Smith, Smith's Improved, Downing, and a dozen other (English) sorts; and while all these have mildewed more or less in leaf and fruit, mildew has never yet appeared on Red Jacket.

Smith's Seedling. A new variety grown from seed of the Houghton; more vigorous and upright in growth of plant than its parent; the fruit is larger and somewhat oval in form; light green flesh, moderately firm, sweet and good; shy bearer.

Triumph. Very large size, light green to yellow in color, and of excellent quality.

RASPBERRIES

Both red and blackcap Raspberries are very easily grown. Blackcaps should be planted in rows 3 x 7 feet and the red 3 x 6 or 5 feet each way, and if particular in planting to work both ways will cost very little for cultivation. They will do well on most any good, well-drained soil, and the richer the better. One of our gardeners near Richmond received from one acre of Cuthbert, season of 1894, \$405 at wholesale price.

Cuthbert. (Queen of the Market.) Canes strong, upright, very vigorous, sometimes branching; foliage luxuriant; fruit large to very large, red; moderately firm, with high, sprightly flavor; very productive. Its many valuable qualities render it desirable for home or market culture. It succeeds well generally, and is almost the only one that can be relied on in the cotton states. We commend it to planters in all sections.

Columbian. An improvement on Shaffer's, which it resembles, but the berry is firmer; adheres to the bush much longer and retains its shape better, both on the market and for canning; bush a strong grower, attaining a very large size; one of the hardiest, and wonderfully prolific; unexcelled for productiveness, and stands at the head for canning, making jam, jelly, etc. Fruit very large, dark red.



Miller Red.

RASPBERRIES, continued

Cumberland. A black Raspberry; large berry; hardy, firm and productive. It is a strong, vigorous grower, and fully equal to the Gregg. We have not fruited it yet.

Gregg. This is one of the largest, if not the largest, of the Blackcap family; fruit large, black, with a slight bloom; flesh quite firm, moderately juicy, sweet and rich; the fruit ripens late and very evenly, making the picking season short; it is a very strong grower and good bearer; very desirable.

Golden Queen. A seedling or 'sport' of the Cuthbert, and in hardiness and vigorous growth of plant resembles that variety; fruit of large size; color beautiful yellow; flavor excellent.

Kansas. Strong, vigorous grower, standing extremes of drought and cold, and bearing immense crops; early, ripening just after Palmer; berries size of Gregg, of better color; jet black and almost free from bloom; firm, of best quality; presents a handsome appearance and brings highest price in market. Every planter who wants a prolific, hardy, early berry of immense size, handsome appearance and superb quality should plant it.

Miller Red. This new red Raspberry originated in Sussex county, Delaware, and is very popular with a few fruit-growers in that section who have preferred to market the fruit rather than sell the plants. Berry is as large as Cuthbert, holding its size to the end of the season; round in shape; color bright red, does not fade, but will hold its color after shipment longer than any other red variety; core very small; does not crumble, making it the firmest and best shipping berry in existence; has not the flat taste of some varieties, but a rich, fruity flavor, entirely its own. The time of ripening is with the very earliest, the first picking being with Thompson's Early, June 11; the Miller producing double the quantity of berries at each picking that Thompson's did, in the same field under the same conditions, continuing until August 3.

Munger. Description of introducer: "The fruit of Munger is black and resembles Gregg very much. It is a better flavored berry than Gregg, tougher in texture, and therefore a better shipper. In size it excels Gregg by almost 25 per cent, being extra fine for canning and evaporating. Its season of ripening is from five to eight days later than Gregg, and has a special faculty of withstanding drought and hot sun. The past season, when most others were dry and seedy, Munger ripened up sweet and juicy, and readily brought an advance of 50 cents per bushel over other kinds. The canes, too, resemble Gregg, are free from disease, upright in growth and have never yet been affected by the cold of winter."

Ohio. This berry is one of the most profitable for evaporating on the list at the present day. The fruit is of medium size, but very sweet; one of the best for table use. We think it ahead of the Gregg for family, as it is not so seedy. We recommend it as one of the very best.

Souhegan. Cap. A week or ten days earlier than Doolittle; strong grower; very hardy; fruit large; jet black; handsome. One of the very best of the caps.

Thompson's Early Prolific. Red. For earliness, hardiness, vigor, beauty and quality it is unsurpassed. It is a vigorous grower, canes 4 to 6 feet high; very healthy foliage; very productive of large, bright red, firm berries of good quality.

The Japan Wineberry. After fruiting this two years, we have come to the conclusion that it is not only a very attractive novelty, but also a valuable acquisition to the berry family. The bush is unlike any other, is very ornamental and as hardy as a rock, living through the winter of last year without any covering whatever. The fruit is formed and enclosed until ripe in burs, resembling moss-rose buds, but when ripe the burs open and expose the berries to view. The berries are of good size and attractive, light wine color, each one shining like a diamond. The flavor is sprightly and delicious. It will delight all.



Erie Blackberries.

SELECT BLACKBERRIES

Should be planted in rows 6 to 7 feet apart, 3 to 5 feet in the rows. Keep the ground light and rich. Pinch the canes back when they have reached 4 feet in height.

Eldorado. A description by the introducer: "Like many of our best fruits, Eldorado is an accidental seedling and takes its name from the town close by where it was found, in Preble county, Ohio. It has been cultivated twelve years, and under careful test at different experiment stations for four years has never winter-killed or failed to produce a full crop of the finest fruit. The vines are very vigorous and hardy, enduring the winters of the far Northwest without injury, and their yield is enormous. The berries are very large, jet black, borne in large clusters, and ripen well together; they are very sweet, melting and pleasing to the taste, have no hard core, and keep for eight or ten days after picking with quality unimpaired."

Erie. For four years we have been growing this new berry, and it is the most vigorous and healthy plant of any Blackberry we have ever grown, and thus far absolutely hardy. Very productive of berries of the largest size, coal-black, firm and solid, and sells in the market at highest prices; fine form and ripens early. Is being extensively planted both in family and market gardens.

Early Harvest. One of the earliest, if not the very earliest Blackberry yet introduced, ripening two weeks before Wilson's Early; berry medium size, good

quality and very prolific; it is firm and very attractive in appearance. A good market sort.

Iceberg. A new white Blackberry; was originated by Luther Burbank; clusters large; berries as large, earlier, sweeter and more tender throughout than the Lawton; white; transparent.

Lucretia. This is a trailing Blackberry, or Dewberry; a good grower and productive; fruit large and of good flavor.

Snyder. The one great Blackberry for market in the far North, as it is the most vigorous, hardy, productive and reliable of all; has never been known to winter-kill, even in the Northwest, with 25 to 30 degrees below zero. Fruit of medium size and good quality; ripens medium to late.

Wilson's Early. A well-known and most valuable sort; it is of very large size and very productive, ripening its fruit quite early and maturing the whole crop in a short time, adding thereby greatly to its value as a berry for early marketing. There has been more fruit grown of this variety during the last twenty years than all other sorts combined.

Wilson, Jr. A seedling of Wilson's Early; said to inherit all the good qualities of its parent, besides being large and earlier. Probably the best early Blackberry yet introduced.

STRAWBERRIES

We think there is no fruit that is more healthful and will give better satisfaction. No home or garden should be without them, and should have fresh berries from three to five weeks. Strawberries should be planted either in the fall or spring. We have better success in planting in early spring, although we plant up to the time that berries are nearly ripe and we always succeed. Before planting we clip the roots off, and if it is late in the spring we cut all foliage off and dip roots in a thin puddle of mud before planting. When we used to grow Wilson largely for market we planted with rows 3 feet apart and 12 to 15 inches in the row, but since we have been growing strong varieties, as the Tennessee Prolific has proved to be, we plant rows 4 feet apart and 3 feet apart in the rows, and on good land we find it plenty close. While any land that will grow good corn will grow good Strawberries, it will pay to have or make the land very rich before planting. It takes no more work for an acre to produce 150 to 200 bushels than 25 to 50 bushels.

Strawberries are a fruit that we have never made a failure of. If we should have late frosts and cut off the first blooms, there will always be a later bloom and you are always sure of half a crop of berries.

In the list that we present to you they have nearly all been well tried by us, but we do not advise you to plant many varieties, as any two or three will give you all you wish for home use, and, as a market berry here, we would plant only the Tennessee Prolific.

The blossoms of most varieties are perfect or bisexual, except those marked P., which are destitute of stamens, and are termed pistillate or imperfect flowering varieties. They must be planted near some perfect-flowering sort or they will produce little or no fruit. Crescent, Bubach, Haverland, Greenville and Crystal City are of this class, but are among the most productive when plants of such varieties as Charles Downing, Sharpless, Tennessee Prolific, Jessie and Lady Thompson, and other perfect-flowering sorts are planted in the same field alternately. At least every fifth row in a field of pistillates should be planted with some perfect-flowering sort; while, if as many of a perfect-flowering sort are to be planted, it is better to plant in alternate rows.

All bloom should be cut off as soon as it makes its appearance after spring planting, as it will weaken the plant very much to allow it to fruit the first season, and results will not be nearly as good as if cut off.

To grow fine berries they should be cultivated well from spring to fall, running a light cultivator after each rain, and also keep all weeds pulled out of rows. If the row is kept from 15 to 18 inches wide, and the plants thinned out in the rows, the result will be much larger and finer berries.

Bubach's No. 5. P. Combines many excellent qualities, such as great and uniform size, fine form and color, good quality of fruit, unsurpassed productiveness and great vigor of plant. It ripens almost as early as the Crescent, and continues about as long in bearing, and fully as prolific. Leaves large, dark green, and endures the hottest sun perfectly. Is taking the lead in many sections, and is one of the best large berries for home use.

Brandywine. Originated in Pennsylvania. The introducer claims it to be of large size; firm and of best quality, continues a long time in fruit, and the plants very strong, with perfect foliage.

Crescent Seedling. P. Fruit medium to large, roundish, conical; bright scarlet. It requires less time and attention than most varieties, and is well calculated for those who cannot and will not give the necessary labor to produce the better kinds.

Cumberland. (Cumberland Triumph.) Very large, regular and uniform in size;

light scarlet; very handsome; flesh juicy and good flavor; plant very vigorous and productive. It succeeds well almost everywhere. All things considered, this is one of the most valuable sorts, and is very popular with our Richmond fruit-growers.



Brandywine.



Lady Thompson Strawberry.

STRAWBERRIES, continued

Gandy. One of the latest berries we have. The berries are large, uniform in size, and of bright and firm color; very popular as a market variety, coming in when other varieties are run down and small. It is fine for home market.

Glen Mary. It is described by its introducer as follows: "The Glen Mary is a chance seedling, which originated with Mr. James A. Ingram, Chester county, Pennsylvania, an uncle of Mr. Edward T. Ingram, the well-known originator of the famous Brandywine Strawberry. In productiveness, it far surpasses the Crescent, not in number of berries, but in quarts. The season of 1895, one quarter of an acre picked at the rate of 1280 quarts per acre at a single picking, and over 12,000 during the season. Medium to late. Perfect bloomer."

Haverland. P. Large, oblong; light red; fair quality; a great bearer. Plant very vigorous; recommended for home use.

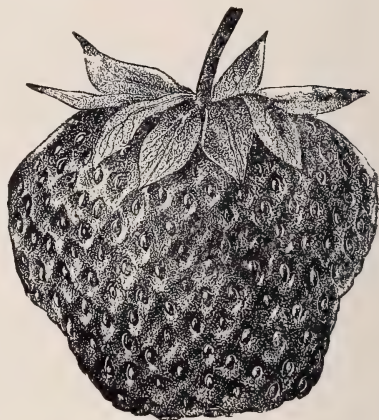
Lady Thompson. Origin, North Carolina, and it has more good points than any berry ever grown being very early, very large, a perfect bloomer and good shipper. It is of good color and fine flavor.

Meek's Early. Origin, Maryland. Perfect flower, fruit light-colored; very prolific; valuable on account of its extreme earliness.

Michel's Early. P. This is an accidental seedling, and the earliest and most profitable in cultivation; of the finest flavor; a perfect blossom; as large and firm as the Crescent, from ten to twelve days earlier, and as productive. Plant the hardiest of all known, and free from rust or blight.

Sharpless. This large, showy Strawberry originated with J. K. Sharpless, Catawissa, Pa. Fruit large to very large; bright scarlet, somewhat glossy; flesh light red, quite firm, moderately juicy, sweet, rich, and of very good flavor; medium to late in ripening; a most excellent sort for family use, and also a very profitable one for market.

Tennessee Prolific. A seedling of Crescent crossed with Sharpless, clearly showing parentage of both; perfect-flowering, vigorous, stocky plant, healthy in every way; very productive of medium to large bright scarlet berries of fine quality; ripens medium to early; is a fine market or family berry, thriving well on quite light dry soil.



Sharpless Strawberry.

FIGS

Brunswick. Very large; color violet; quality excellent; very reliable. Bears young, often fruiting in the nursery rows, and is very productive. One of the best known and most popular varieties.

Black Ischia. Medium; blue-black; good.

Brown Turkey. Medium; brown; sweet and excellent; very prolific. Most reliable for field culture.

Green Ischia. Green-crimson pulp; prolific.

Lemon. Medium to large, yellow, sweet; a profuse and early bearer; very desirable; pulp sweet and of excellent quality; trees of this variety have been known to yield twelve bushels of excellent fruit annually for many years in succession.

Nut-Bearing Trees

Our foremost enterprising fruit-growers are planting Nut Trees largely for market purposes; and others who enjoy the nuts during winter are realizing that in order to have an abundant supply it is only necessary to plant the trees, as hardy varieties are now grown that succeed in all sections of the United States.

Until recently Nut Trees have been but little grown in nurseries, and in consequence all transplanted trees have come from the forests or where they have come up and grown naturally, and having but little or no fibrous roots, their transplanting has been attended with much uncertainty, and the impression has been formed that they could not be transplanted, but that to insure success the seed must be planted where the tree is intended to stand, which is erroneous, and has deterred many from engaging in this profitable industry. Many of the nut-bearing trees, when grown in nurseries, are well supplied with fibrous roots, and can be transplanted as safely as an apple tree, and the planter has the benefit of the three or four years' growth in the nursery over that of planting the seed, with the uncertainty of their coming up regularly, the time, care and attention required to get them properly started. We therefore advise our customers to always plant the trees, if they can be had, and save three or four years' time.

CHESTNUTS

Japan Mammoth. This valuable new nut is attracting widespread attention. It claims superiority over all others because it is larger, sweeter, better; bears young and abundantly; like all valuable fruits nowadays, it is necessary to graft to secure and maintain the most reliable kinds; the tree is dwarf in habit, hardy and ornamental. The winter of 1896 we imported 4,000 one-year grafted Chestnuts from Japan, and some of these trees fruited in the nursery the same year, and all we had left unsold fruited in 1898. We planted out another lot of 5,000 from Japan in the spring of 1898, and many of them fruited the same season. We find them very prolific in nursery. Small trees of 2 to 2½ feet, with twelve to fifteen burs, and with three to five large Chestnuts in a bur.

Spanish. A vigorous grower, and forms a handsome head for lawn planting; a valuable species, both for ornament and fruit. The fruit is much larger than the American variety; very sweet and excellent when boiled or roasted. Bears early.

American. The well-known native variety; a stately tree, with broader leaves than the European, and producing smaller nuts but a large quantity of them; both useful and ornamental. The timber is very useful for many purposes.

BUTTERNUTS

A handsome, rapid-growing, luxuriant, tropical-looking tree; very ornamental and productive; the nuts are somewhat like black walnuts, but longer and flat; the kernel is much sweeter and rich and more delicate; fine flavor.

WALNUTS

Japan. Produces in abundance nuts considerably larger than the common hickorynut, which are borne in clusters of 15 to 20. The shell is thicker than the shell of the English Walnut, which in a general way it resembles, but is not as thick as that of the Black Walnut. The meat is sweet, of the very best quality, and can be removed entire. The tree grows rapidly, and attains a very large size, with a magnificent spreading top.

English. A fine, lofty-growing tree, with a fine spreading head, and bearing crops of large and excellent nuts. The fruit in a green state is highly esteemed for pickling, and the great quantity of the ripe nuts annually imported and sold here attest to its value; the tree is peculiarly well adapted to the climate of the South, and deserves extensive cultivation.

American Black. This is the common native variety. The nuts are excellent and always desirable; besides, the wood is very valuable for many uses.

ALMONDS

Hard Shell. A fine, hardy variety, with a large plump kernel, and with large, showy, ornamental blossoms.

Soft, or Paper Shell. This is what is known as the "Ladies' Almond," or "Lady Finger of the Shops," and although preferable to Hard Shell, it is not so hardy; kernels sweet and rich.

ENGLISH FILBERT

The fruit of this being so much larger and better flavored than our native species, gives it the preference for cultivation over the latter in localities where it will succeed.

PECAN

The common wild native variety found in the South, produced from the seed; bears regular crops of medium size; very salable nuts and good. The trees grow very slow in the nursery until about three or four years, and after being planted out they grow very fast and make very fine large trees. Parties South are planting hundreds of acres of this sort and expect to make it a success.

Paper-shell. This is, indeed, the most valuable nut yet introduced; large, often

PECAN, continued

1½ inches in length; thin shell; the kernel is very large, rich, sweet and delicious. Enormous profits have been received from the culture of this nut; many thousand trees are being planted, and soon the nut industry, especially of the South, will be very large.

SHELLBARK

A species of the Hickory. The nut is small, rather flat, with thin shell; it is very rich, sweet and delicious; very desirable.

Esculent Roots

ASPARAGUS

There is not a more valuable vegetable for the home or market garden, both for health and profit, than this, and no garden should be without it. For home use, too roots, or one row 60 yards long, will furnish Asparagus for the table every day from the first of April until the 15th of June. If wanted for market or bleached for home use, plant in rows 6 feet apart and 18 inches to 2 feet in the rows.

PREPARATION.—For early production, choose a light land, and plant rows running north and south. Open out with plow, running both ways rows 6 feet apart, as deep as possible, and if not deep enough subsoil and dig out to 15 or 18 inches with spade or shovel; then fill in with well-worked manure to about 10 inches of the top; plant crown on top of manure and cover lightly with earth. Keep all weeds down first year, and at each working fill in a little soil, and in the fall cover with manure, and as soon as weather in the following spring will permit, ridge up as high as you can with double plow and rake off smooth with rake. Any crop that can be cultivated, such as corn or potatoes, can be grown between the rows.

Barr's Mammoth. A fine large sort, grown largely for the Philadelphia market, where it is a favorite. The stalks are often an inch in diameter, and retain their thickness nearly to the top.

Conover's Colossal. A standard kind of first quality; tender and high flavored.

Columbian White. This new variety, catalogued by seedsmen in 1895, is claimed

as being a very fine, vigorous grower, and producing white Asparagus without hilling up. We hardly think that it would be clear white unless hilled, but think it worthy of trial by all Asparagus growers.

Palmetto, or French. Southern origin; new; ten days earlier than other kinds; valuable for home or market; largest, tender; regular growth. One of the best.

RHUBARB, or PIE-PLANT

A very desirable vegetable; comes early in the spring. The large stems of the leaves are used for pie-making and stewing. It is also a paying crop for market, as it comes in when apples are scarce and high, and takes their place for tarts. It should be planted on very rich ground, and well manured every fall. It should be planted, for market purposes, 4 feet each way in the rows. There are several varieties grown, but we consider Myatt's Linnæus the best, and it is the only kind we grow. Myatt's Linnæus is an extra early good variety; large and tender, with delicate flavor.

HORSE-RADISH

Every home garden should have Horse-radish. It is also a very profitable crop to grow for market. It should be planted in good, rich soil early in the spring. It is grown from small roots cut from 3 to 4 inches long, and planted about 6 inches from the top of the ground. It should be taken up in winter, and small side roots used for planting and large roots stored away for market.

"The trees which I got from your Nursery, through Capt. J. S. Coates, are satisfactory in every respect. They have thriven better and come into bearing sooner than any stock of trees in my experience. All my future orders for nursery stock shall be placed with you."—WATKINS L. WICKHAM, Montpelier, Va., July 29, 1904.



Sugar Maples and Teas' Weeping Mulberry.

Photo at "Mapleton," residence of W. T. Hood.

Ornamental Department

While most people appreciate well-arranged and kept grounds, large or small, many fail to realize that they can have equally fine grounds. These have had a few shrubs or roses growing in thick turf, with no attention given to pruning or cultivating. Under such circumstances, good results cannot be expected.

Aside from the pleasure of having fine trees, shrubs, vines and flowers in the grounds surrounding a home, few realize how much these add to the commercial value of the place. A purchaser having to decide between a house with bare and unkept grounds and one surrounded by fine ornamentals, invariably chooses the latter at a marked advance in price, because he sees that he will at once enjoy what it would otherwise take some years to secure. Sagacious men are led by a knowledge of these facts to plant fine trees and shrubs about vacant lots they are intending to put upon the market. Lots thus planted readily secure purchasers at good prices, when bare grounds go begging for buyers.

HOW TO PLANT

Do not make the mistake of planting at random all over the grounds. A fine, well-cut lawn is one of the handsomest features of a place. Trees may be planted along a lane or avenue leading to the house, or dotted about the lawn on lines radiating from the house. This will secure light and air, with good views from the house. Upright shrubs and roses should be planted in beds, each class by itself, about the borders of the grounds. These beds should be well cultivated and the plants annually pruned. When the growth of the plants has made them very thick, some should be taken out. It will not do to plant so little that years must elapse before a fine effect will be produced. A surplus should be planted at first, and this gradually be taken out. Vines should be planted near to and allowed to climb upon and about the house, or they may be trained on posts, arbors or stakes, placed in suitable locations on the lawn.

WHAT TO PLANT

A detailed list of desirable ornamental trees and shrubs would be little less than a recapitulation of our entire list; but as few have room for all, we here present a list of the most desirable in each class and refer the reader to the proper place in the Catalogue for descriptions of them.

Flowering Trees. MAY—Magnolias in variety, Horse-chestnuts, Flowering Cherry. JUNE—Laburnum, Syringæfolia, Lindens in variety.

Trees Valued for their Form and Foliage. Cut-leaved Weeping Birch, Kilmarnock Willow, Weeping Mountain Ash, European Linden, White-leaved Weeping Linden, Norway Maple, Purple-leaved Beech, Teas' Weeping Mulberry.

Evergreen Trees. Norway Spruce, Scotch Pine, Chinese Golden Arborvitæ, Irish Juniper, American Arborvitæ, Silver and Balsam Firs, etc.

Upright Flowering Shrubs. APRIL—Japan Quince, Double-flowering Plum, Dwarf Double-flowering Almonds, Spirea, Lilacs in variety. JUNE—*Deutzia gracilis* and *D. crenata fl. pl.*, Snowball, Weigela in variety, Syringa, Calycanthus. JULY—*Spiræa callosa* and *S. callosa alba*. AUGUST AND SEPTEMBER—Althea in variety, *Hydrangea paniculata grandiflora*.

Roses. Climbing and Moss, blooming in May and June; Hybrid Perpetual and Perpetual Moss, blooming at intervals all summer, and tender Tea Roses, blooming constantly.

Deciduous Trees

We invite special attention to this select list of trees, so well suited to the lawn and yard, or as shade trees for streets in cities or towns.

BEECH

Purple-leaved. Foliage deep purple in the spring, but under our hot sun and in dry seasons it loses much of its color. For the northern states it is a very desirable tree.

CATALPA

This desirable and attractive tree is now widely known. It is planted for shade, also for its blossoms, and on account of its value as a timber tree. Whole

tracts of land have been planted in the West for this purpose, as it is a very rapid grower, and found to be very desirable for railroad ties, etc. "Massive in all its proportions, straight and rigid, it looks like a production of the tropical zone; yet it seems to be entirely hardy, with its immense leaves, sometimes lobed, velvety brown when they first appear, and changing into dark green, followed by immense panicles of flowers, containing sometimes between three and four hundred buds and blossoms, contrasting finely with its dark, massive foliage. It may be truly called a 'regal tree.'"

Bungei. One of the most attractive of trees. It forms a perfect half-globular or umbrella head, with foliage of a deep green color, and with great precision, making a beautiful roof of leaves. A most striking and ornamental tree upon the lawn.



Catalpa Bungei.

"Having sold and delivered two deliveries for your nursery, I find my patrons better pleased with your stock than any that has been sold in the county."—JNO. R. BIDDLE, Northeast, Md., July 16, 1904.

CHERRY. Cerasus

Large, double-flowering ; produces a profusion of double white flowers in the early spring.

DOGWOOD

Common. A small-sized native tree of great beauty when in bloom. Floral covering (incorrectly flowers) large, pure white, followed by brilliant scarlet fruit in autumn.

ELM

American, or White. A native tree of large size, with spreading head and graceful, drooping branches. Of all trees, no other perhaps unites in the same degree majesty and beauty, grace and grandeur, as this one does. It flourishes in all parts of the country and deserves to be more generally planted.



Elm, American or White

HORSE-CHESTNUT

Common White-flowered. A handsomely formed tree, with very attractive flowers ; succeeds well in the northern states and in the elevated portions of the southern states, but in many places South its foliage burns under the hot sun.

Red-flowered. A superb tree in foliage and flowers ; the foliage is darker green than the white, and the flowers showy red, coming later. Very desirable.

Ohio Buckeye. A native of the western states, forming a large-sized tree ; flowers pale yellow.

JUDAS TREE. Red-Bud

A very ornamental tree of small size, with heart-shaped leaves, and is covered with a profusion of delicate pink flowers before the foliage appears.

Japan. Recently introduced from Japan. The flowers are larger than the above species, and of a light rose color. It is entirely hardy and very beautiful.

KENTUCKY COFFEE TREE

A large-growing tree, with rough bark, stiff, blunt shoots and feathery foliage.

LABURNUM. Golden Chain

A very ornamental small tree, a native of Europe, with smooth, shining foliage, bearing a profusion of drooping racemes of yellow flowers.

LINDEN

American Basswood. A large native, rapid-growing tree, with large leaves and fragrant flowers ; fine for street or lawn planting. Is becoming very popular, and deservedly so.

European. A fine pyramidal tree, more compact in its habit than the above, but does not attain as large a size. A very popular tree.

White-leaved European. A vigorous growing tree ; its handsome form, growth and foliage render it worthy to be classed amongst the best of our ornamental trees.

MOUNTAIN ASH

European. A small tree, with shining pinnate leaves and large cymes of white flowers, followed by clusters of bright red fruit.

"It is with great pleasure that I testify to the superior quality of your stock of trees, etc. Those bought of you, through your agent, Capt. J. S. Coates, prove in a most satisfactory manner their rapid-growing qualities and early bearing habit. No other stock equals them in this county."—GEORGE T. HARRIS, Moody, Virginia, July 29, 1904.

"Your trees give perfect satisfaction."—A. W. ASHBV, Bluemont, Va., November 13, 1903.



Japan Maple.

MAPLE

Silver-leaved. A hardy, rapid-growing native tree, attaining a large size; valuable for producing a quick shade; fine for street and park planting, for which purpose it is planted more largely than any other tree.

Norway. One of the most beautiful and desirable trees known. Foliage broad, deep green, shining; its compact habit and stout and vigorous growth render it one of the most valuable trees for street or lawn planting.

Sugar. A well-known native tree, of stately growth, fine form and foliage; very desirable as an ornamental and shade tree.

Sycamore. A European species of moderate size. Leaves large, dark green.

Schwedler's. This beautiful Maple of recent introduction is attracting considerable attention; it is of the Norman family and of about the same habit of growth; its handsome purplish crimson leaves in May and June, changing to a bronze as they mature, are much admired.

Red, or Scarlet. A native species, of moderate size, producing deep red blossoms, and in autumn the foliage changes to a brilliant scarlet.

JAPAN MAPLES

Mostly dwarf habit, several kinds weeping and cut-leaved, with brightly colored foliage, red, purple, etc. These are indeed remarkable for beauty, and wherever planted give perfect satisfaction.

PLATANUS. Buttonwood

Oriental Sycamore. A tree of the largest size, growing rapidly, very ornamental and entirely hardy.

POPLAR

Carolina, or Cottonwood. A large-sized tree, of remarkably rapid growth.

PEACH

The three varieties described below are all very attractive, and their effect is very pleasing when all are grouped together.

Double White-flowering. Flowers pure white and very double.

Double Rose-flowering. Flowers double, pale, rose-colored; resembles small roses; very pretty.

Double Red-flowering. Flowers semi-double, bright red; very fine.

SWEET GUM

A fine ornamental tree, the foliage resembling that of the Maple; corky bark; leaves changes to deep crimson in autumn.

TULIP TREE

A magnificent native tree; large, smooth shining leaves; flowers tulip-shaped, greenish yellow; fine for shade; difficult to transplant except when of small size.

TEXAS UMBRELLA TREE

It assumes a dense spreading head resembling a gigantic umbrella, is of unique appearance and a most desirable shade tree. It is not entirely hardy here.

Weeping Trees

BIRCH

Weeping Cut-leaved. A charming tree in the northern states, but does not show so much beauty South, except in very favorable locations. It is of very graceful, drooping habit, silvery white bark, and delicate cut foliage. Trees liable to sun-scald.

DOGWOOD

Weeping. This valuable tree is among the earliest bloomers, and its beautiful white blossoms in spring, and red berries in fall, make it one of the handsomest ornaments for the front yard or lawn that can be planted, while it presents a dense and beautiful green foliage during the entire growing season. No one should fail to secure one of these hardy, truly ornamental trees.

MOUNTAIN ASH

Weeping (*Sorbus aucuparia pendula*). The branches of this distinct variety are of a straggling, pendent habit; a rapid grower, but is not satisfactory South, and is liable to sun-scald.

MULBERRY

Teas' Weeping. This is one of the most graceful and hardy among the weeping trees, and has only to be known to be appreciated; the foliage is a beautiful glossy green and very abundant, and the tree a rapid grower. No weeping tree is so well adapted to our southern climate as this, or gives such general satisfaction.

WILLOW

Common Weeping. This is one of the most graceful and beautiful of the

WILLOW, continued

weeping trees; it is of rapid growth, attaining a very large size, showing its great beauty in damp or moist soils, but grows fairly well in any good soil.

Kilmarnock. A variety of the Goat Willow, making a very pretty tree when grafted six or eight feet high, forming a complete umbrella head, the branches and foliage being very dense; unique in form. A very showy tree for planting on the lawn.



Teas' Weeping Mulberry.

"I am glad to say that you sent the finest nursery stock to this county I have ever seen. Far ahead of stock sent here by any other concern. I have as fine fruit in my orchard as ever grew anywhere, and all of my trees came from you."—J. K. P. LATRD, Bessemer, Ala., July, 1904.

Evergreens

ARBORVITÆ

American. Sometimes called White Cedar. A well-known native species of great value, forming an upright, conical tree of medium size. Especially valuable for screens and hedges.

Chinese Golden. This is the most elegant and charming, and justly becoming the most popular of the Arborvitæ; the beautiful golden tint of its foliage and the compact and regular outline of its habit render it unusually attractive.

Siberian. A well-known popular variety, very dark green in color and compact in growth. The outline is regularly conical, and its hardness is unquestioned.

Pyramidalis. Upright. A remarkably erect form, dark green, compact and very desirable, and as conspicuous as the Irish Yew.

BAMBOO

Japanese. This is a very attractive ornamental; grows to an immense height. We have a large stock—direct importation from Japan.



Norway Spruce.

FIR

Balsam (Balm of Gilead). A well-known and popular tree; very pretty when young.

English Silver. A noble tree, with spreading horizontal branches; dark, shining green color, holding its color well through the winter; it is rather stiff-looking when young, but makes a splendid tree.

JUNIPER

Irish. A distinct and beautiful variety, of very erect, dense, conical outline, resembling a pillar of green.

PINE

Austrian. From central Europe, growing over 100 feet high. Leaves long, stiff and very dark green. Hardy everywhere, and one of our most valuable conifers for windbreaks, belts, etc.

Scotch. A rapid-growing, very hardy species from the central portion of Europe, with short, rigid, light green leaves. Very valuable for screens and masses.

White. An old well-known native tree, of rapid growth, and entirely hardy. Leaves rather long, slender and slightly glaucous. It is an indispensable species.

SPRUCE

Norway. A European species, of very rapid, elegant and lofty growth, and when it attains to the height of 15 or 20 feet the branches assume a graceful, drooping habit. One of the handsomest, as well as the most popular evergreen trees; very hardy. (See cut.)

Colorado Blue. A magnificent variety of the Spruce, of compact growth, with strong, handsome foliage of a blue shade.

Douglas'. Notwithstanding the fact that the form of this species peculiar to the Pacific coast is unreliable here, the Rocky mountain variety has proven hardy and beautiful. Dark green.

Hemlock. One of the hardest and most handsome trees; branches drooping; foliage delicate, retaining its color well through the winter; should be in every collection; it also makes a highly ornamental hedge.

Magnolias

Acuminata (Cucumber Tree). A beautiful pyramidal tree, attaining a height of 70 or 80 feet; growth very rapid and upright; flowers greenish yellow.

Macrophylla (Great-leaved). A tree of medium size; leaves from 2 to 3 feet long; flowers 8 to 10 inches in diameter, pure white, very fragrant.

Tripetala (Umbrella Tree). A small-sized tree, of rapid growth; immense leaves; flowers creamy white, 4 to 6 inches in diameter.

Grandiflora. This magnificent southern evergreen may be called the Queen of the Magnolias. It is really a grand tree, but unfortunately too tender to stand the winters well north of the Potomac, and even the climate along the mountains of Virginia is rather too severe for it to do well; but east of Richmond and south of the James river it flourishes finely. The tree is of rapid and handsome growth; leaves 8 to 10 inches long, which are retained the whole year; flowers large, white and very fragrant.

Virginiana (Sweet Bay). A small tree or shrub, with imperfectly evergreen leaves, smooth above and glaucous-white below. Flowers deliciously fragrant, cup-shaped and pure white.

Yulan. Flowers of fair size, pure white, fragrant, and opening before the leaves.

Kobus. White, slightly tinged with



Magnolia Soulangiana.

pink or reverse; flowers well distributed over the branches.

Soulangiana (Hybrid Magnolia). Closely resembles the *M. Alexandria*, but perhaps rather larger and more distinctly marked purple and white flowers. Very handsome.

Hedge Plants

JAPAN HARDY LEMON

This is the coming hedge plant for defensive as well as ornamental purposes. It is hardy as far north as New Jersey, and, if planted in good soil, an impenetrable hedge can be had three years from planting. Requires but little trimming after the third year. So far it has been free from insect depredations. In early spring, when covered with myriads of white flowers, nothing is more attractive, and while not an evergreen, the vivid green wood makes it appear bright during winter. Plants may be set two feet apart.

PRIVET

California. A vigorous, hardy shrub, of fine habit and foliage, nearly evergreen.

Grows in almost any soil, and is very patient of pruning; makes a desirable ornamental shrub as well as hedge.

One of our most enterprising citizens has planted about thirty miles of California Privet hedge around Richmond, and considers it one of the best plants for this purpose. This hardy shrub is used almost exclusively in the North for hedging purposes.

Amoor River. The most desirable of all broad-leaved evergreens where a tall hedge is desired. Growth very rapid; adapts itself to any soil not too arid or a swamp. If properly treated, a good hedge may be expected in two years after planting. Set plants 12 inches apart in ordinary soil, but in very rich land 18 to 24 inches distance may be given.



Hydrangea paniculata grandiflora. (See opposite page.)

Flowering and Other Shrubs

ALMOND, DWARF

Double Rose-flowering. A beautiful small shrub, producing an abundance of small, double, rose-like flowers, closely set upon the twig before the leaves appear. Very attractive.

White-flowering. Produces beautiful double white flowers in April.

ALTHEA. *Hibiscus Syriacus*

The following varieties constitute a beautiful show when in bloom, and exhibit a contrast surpassed by few of our really hardy plants. They are especially fine for hedges and screens.

Amaranthus. Rich purple; fine.

Bicolor. Double white with red stripes.

Carnea plena. White, tipped with pink.

Comte des Flanders. Bright maroon.

Duchesse de Brabant. Deep crimson.

Elegantissima. Bright pink, prettily striped.

Fleur Blanche. Pure white, single flower; fine.

Jeanne d'Arc. Pure white, very full, and superior to any double white known.

Paeoniflora. Large double pink; very beautiful.

Ranunculæflora. White, with maroon center.

Sanguinea. Dark crimson.

Violet claire. Clear violet.

Seedlings. Mixed colors; fine for screens.

ALTHEA, continued

Variegated-leaved Double Purple-flowered. A conspicuous variety, with the foliage finely marked with light yellow, and producing double purple flowers. One of the finest variegated-leaved shrubs.

Amaranthus. Rich, purple; fine.

CALYCANTHUS

Sweet-Scented Shrub

A well-known native bush, the young wood of which has a strong aromatic odor; foliage luxuriant, and the rare chocolate-colored blossoms are delightfully fragrant; blossoms in May and at intervals during summer.

CRAPE MYRTLE

A well-known and beautiful shrub; very attractive on account of its profusion of crape-like flowers, which appear about midsummer and continue for two months or more. Hardy south of Maryland.

DEUTZIAS

Gracilis (Slender-growing Deutzia). Of small size, light green foliage, and delicate, graceful white flowers. Fine for forcing.

Rough-leaved (*D. scabra*). An upright thrifty shrub, bearing a profusion of white flowers in May.

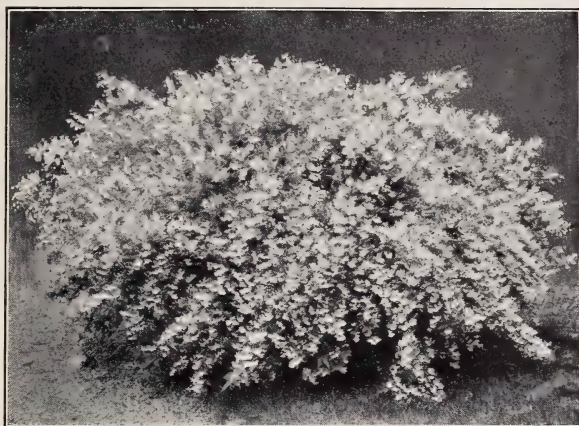
Double-flowering Crenata (*pleno*). From Japan. Flowers double, white, delicately

DEUTZIA, continued.

margined with pink. This is deservedly one of the most popular and desirable flowering shrubs, and no collection can be complete without it.

Double White. Produces a profusion of double, pure white flowers, similar in habit to preceding.

Pride of Rochester. Origin, Rochester, N. Y. Large double white flowers, the back of the petals being tinted with rose; excels most of the old kinds in flavor and vigorous habit. Quite early and very handsome.



Deutzia gracilis. (See preceding page.)

EXOCHORDA

Grandiflora. Japanese origin. A superb shrub, furnishing clouds of bloom in May; the flower is large, pure white, in racemes of five or six, with spoon-shaped petals, which are very narrow and stand apart at the base; the bush is large-growing, attaining sometimes ten feet in height and nearly as broad; perfectly hardy. A grand shrub, indeed.



Lilac.

FRINGE

White. A small native tree or shrub of roundish form, with large, glossy leaves and drooping racemes of pure white flowers having narrow fringe-like petals; blossoms in May or June. Superb lawn tree.

Purple (Smoke Tree, Venetian Sumac, etc.). A very elegant ornamental tree or large shrub, with curious, hair-like flowers of pale, purplish color, that cover the whole plant. Very desirable.

HYDRANGEA

Paniculata. One of the hardiest of its kind; very distinct in flower and foliage; not quite as free a bloomer as *H. grandiflora*, but very pretty and desirable.

Large-panicled (*Hydrangea paniculata grandiflora*). This is one of the finest shrubs of recent introduction, growing 8 to 10 feet high, producing immense pyramidal panicles of white flowers more than a foot long; blooms in August and September; indispensable. (See cut, preceding page.)

LILAC

Common. Very generally known and admired, with its profusion of fragrant bluish-purple flowers.

Common White. Flowers produced in slender panicles; pure white and fragrant.

White Persian. Similar to the preceding, except that the flowers are nearly white, being slightly shaded with purple.

JAPAN LILAC

A fine novelty, attaining the size of a tree, with large deep green glossy foliage, and immense clusters of elegant fragrant flowers late in the season. It is undoubtedly one of the best acquisitions of later years.

Ambroise Verschaffelt. Fine large trusses of bright rose color.

Beranger. Purplish lilac panicles of large size.

Coerulea superba. Large trusses of clear blue.

Flora plena. One of the first double varieties, and one of the most deserving; bright lilac.

Gloire de Croncels. Reddish lilac; fine large trusses.

Saugeana. One of the Persian group, with reddish purple bloom.

Mathieu de Bombasle. A handsome double lilac flower and large truss.

President Massait. Large trusses and purplish lilac when fully open.

Prof. Stockhardt. Large panicles of lavender-colored flowers.

Pyramidalis. A charming novelty, with large semi-double flowers; rose-colored.

Renoncule. Short, compact truss of exceedingly beautiful double flowers; pale reddish lilac.

Ville de Troyes. Large fine trusses of rosy lilac flowers.

Virginale. Very large panicles of pure white flowers.

JAPAN QUINCE

Produces bright scarlet flowers in great profusion in the early spring; very attractive and hardy; one of the very best hardy shrubs in the catalogue.

White-flowering. A desirable shrub, producing delicate white and bluish flowers in early spring.



Spirea Van Houttei.

Photo at "Mapleton," residence of W. T. Hood.

PEONIES, HERBACEOUS

A very showy and most useful class of hardy plants; will flourish in any section. They grow and flower well almost in any soil with very little care, but the flower will be finer and colors brighter if given a deep, rich loam, well manured.

White and Pink.

PLUM

Purple-leaved (*Prunus Pissardii*). One of the very best small trees or shrubs of recent introduction; the foliage is a beautiful red-purple, changing to a deep black-purple; the hot sun has no ill effect on its rich colors; it remains beautiful until frosts come, something unusual in purple-leaved plants; by far the best of its kind; exceedingly hardy and very easy to transplant.

Double-flowered. Of recent introduction from China. A very hardy shrub; flowers semi-double, of a delicate pink, closely set along the branches, forming a compact spike. Very pretty and desirable.

SPIREA

Ariaefolia. A profuse bloomer, having large panicles of elegant white flowers.

Billardii. Bright rose-colored flowers; blooms nearly all summer; desirable.

Billardii alba. Very similar to the rose-colored, but with blossoms pure white.

Plum-leaved (Bridal Wreath). A very beautiful variety; flowers pure white, small and very double; blooms very early.

Reevesii. A very pretty sort, producing clusters of white flowers that cover the whole plant.

Van Houttei. One of the most attractive of the newer Spireas, blooming freely and entirely hardy. Flowers pure white.

SNOWBALL

Common. An old and well-known shrub, bearing large balls of pure white flowers.

Japan (*Viburnum plicatum*). A rare and exceedingly beautiful species from China. Flowers in large, globular heads; pure white, hanging long on the bush. A very choice and desirable shrub.

SYRINGA. Mock Orange

A rapid grower; flowers large, white and fragrant.

WEIGELA

Rose-colored. An elegant shrub, with beautiful and strong rose-colored flowers; hardy and of easy cultivation. Should be in every collection.

Dwarf Variegated Rose. Of spreading habit; leaves distinctly variegated; stands the sun well.

Roses

Roses are the most beautiful of flowers, and they are among the easiest to raise in perfection. They require plenty of manure and good cultivation. Old and decayed branches, and at least half the previous season's growth, should be cut away early each spring, and a little cutting back after the first blooming will insure more late flowers. The so-called tender Roses must be carefully protected in winter by covering them with leaves and evergreen boughs; and the hardy sorts will be rendered more vigorous and productive of fine flowers if they, too, are similarly protected.

HYBRID

PERPETUAL ROSES

Alfred Colomb. Raised from Jacqueminot. Brilliant carmine-crimson; very large, full, and of fine globular form; extremely fragrant, and in every respect a superb sort; green wood, with occasional pale greenish thorns; foliage large and handsome. One of the most useful of all sorts for general cultivation. Budded and on own roots.

Anne de Diesbach. Carmine, a beautiful shade; very large; a fine garden sort; does not thrive on its own roots.

Augusta Mie. Delicate pink; cupped and vigorous.

American Beauty. A grand Rose for either forcing or outdoor culture. Its very double flowers are of a deep crimson color and very fragrant; it is of full and very perfect form, with the petals finely imbricated; a constant bloomer and strong grower. Very desirable in every way; its rich "June-rose" scent would alone commend it, to say nothing of its many other good qualities.

Caroline de Sansal. Clear, delicate flesh color; fine form; one of the best of its color.

Coquette des Alpes. White, tinged with carmine; very fine; a very free bloomer.

Coquette des Blanches. Pure white; very beautiful. We think this the best pure white Hybrid Perpetual.

General Jacqueminot. Brilliant velvety crimson; large, showy and a fine grower; a magnificent variety.

Giant of Battles. Brilliant crimson; large, very double and sweet; esteemed one of the finest.

Gloire de Margottin. One of the most brilliant red Roses in cultivation; large, full and handsomely formed.



Coquette des Blanches.

Jules Margottin. Bright cherry-red, large and full; a truly beautiful Rose.

La France. Delicate silvery rose; very large and full; an almost constant bloomer; equal in delicacy to a Tea Rose; the most pleasing fragrance of all Roses; only a moderate grower.

La Reine. Brilliant glossy rose; very large, cupped and beautiful; a superb Rose.

Madam Charles Wood. Extra large, full and double; color deep rosy crimson; sometimes brilliant scarlet; an early and continuous bloomer.

Madam Plantier. Pure white; above medium size; full; produced in great abundance early in the season. One of the best hardy white Roses.

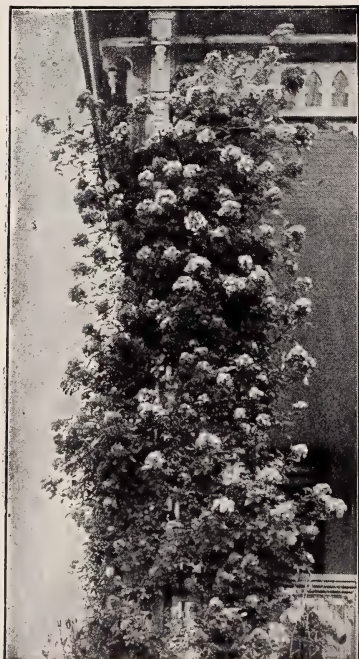
HYBRID PERPETUAL ROSES, continued

Magna Charta. This grand Rose is a strong grower, a very free bloomer, and has magnificent foliage; color bright pink, suffused with carmine; very large, full and of excellent form.

Marshall P. Wilder. Raised from General Jacqueminot. It is of vigorous growth, with healthy foliage; flowers large, semi-globular, full, well formed; color beautiful cherry-carmine; very fragrant. In wood, foliage and form of flower it resembles Alfred Colomb, but the seedling excels that famous variety in vigor, hardness and freedom of bloom. It continues to bloom profusely long after the other Remontants are out of flower. In brief, it may be described as an improved Alfred Colomb, and as good a Rose as has been raised by any one. It is undoubtedly the finest of its color.

Mrs. J. Laing. A beautiful rose color; soft pink; large and of fine form; very fragrant.

Paul Neyron. Deep rose color; splendid foliage and habit, with larger flowers than any other variety; a valuable acquisition.



Crimson Rambler.

Prince Camille de Rohan. Deep velvety crimson; large, moderately full; a splendid Rose.

Victor Verdier. Fine bright rose, shaded with carmine; very hardy and a fine bloomer; a splendid Rose.

Vick's Caprice (Vick). Decidedly distinct, as each satiny pink petal is prettily striped with white and bright carmine. A good grower and free bloomer.

HARDY CLIMBING ROSES

Baltimore Belle. Pale blush, nearly white; double; best white climbing Rose.

Crimson Rambler. A new climbing Rose of unusual attractions; very hardy, having withstood 10 degrees below zero without covering; vigorous in growth, having grown 8 to 10 feet in a season; produces a profusion of blossoms, having been known to produce 300 blossoms on one shoot. The Crimson Rambler is specially adapted for covering trellises, training to side of the house, or can be cut back and grown in a bush form. Extra fine plants of this novel variety.

Climbing Victor Verdier. Another excellent pillar Rose of strong growth, with showy rosy carmine flowers, large, full and abundant.

Greville, or Seven Sisters. Flowers crimson, changing to blush, in large clusters.

Madame Alfred Carriere. Extra large, full flowers; very double and sweet; color rich creamy white, faintly tinged with pale yellow; a strong, hardy grower and free bloomer.

Queen of the Prairie. Bright rosy red, frequently striped with white; large, compact and globular.

Reine Marie Henriette. Large, finely formed flowers; very full and double; borne in clusters and Tea-scented; color rich crimson, elegantly shaded. New and fine.

Tennessee Belle. Dark pink; profuse bloomer and strong grower. One of the best climbing Roses for the South.

Yellow Rambler. A new hardy yellow climbing Rose, blooming after the same manner as Crimson Rambler; flowers of medium size, in immense clusters, often thirty-five to forty flowers in a single cluster; very sweet-scented. Color, a clear, decided yellow, a color heretofore unknown in a climbing Rose that was in any way hardy.

"I can say that your trees excel any others that I have handled or seen handled. They are nice size, thrifty and delivered in good condition, while many other trees, I notice, are comparatively dead when delivered. I want trees from no other nursery, as I have proved your trees by actual experience. Success to you."—J. H. SCHAEFFER, Merchant, Mt. Storm, W. Va., July 28, 1904.

MOSS ROSES

Comtesse de Murinais. Pure white; large; very desirable; the finest white Moss.

Luxembourg. Deep crimson; fine grower.

Princess Adelaide. A vigorous grower; pale rose, of medium size and good form; good in bud and flower. One of the best.

Salet. Clear rose color; double; a perpetual bloomer.

White. Pure white; produces very few flowers.

TENDER PERPETUAL ROSES

Agrippina. Red, velvety crimson; moderately double; fine in buds; valuable for planting out. One of the best.

Andre Schwartz. Recently introduced and recommended by the European growers as the "True Tea Jacqueminot"; the color is brilliant flowing scarlet, passing to rich crimson; very bright and striking; constant and profuse bloomer; flowers large, full and sweet.

Augustine Guinoiseau (Hybrid Tea). The best recommendation that can be given this magnificent Rose is that it is a pure white La France, having just a tint of blush clouding its broad petals. The buds and flowers are extra large, very full and finely formed; delightfully fragrant.

Bon Silene. Rosy carmine, shaded with salmon; fragrant and very free-flowering. Valuable for the buds.

Bridesmaid. A very valuable new Tea Rose; a sport from the Catherine Mermet. It is a charming, clear bright pink in color, and much superior to its well-known parent. It forces well under glass, and is already very popular with our florists.

Catherine Mermet. Bright flesh color, with the same peculiar luster possessed by La France; large, full and beautiful. One of the finest Teas.

Clothilde Soupert. Medium size; very double and beautifully imbricated like an aster; produced in clusters; pearly white, with rosy lake centers; liable to vary, producing often red and white flowers on the same plant. Valuable to florists for designs, or as a market pot-plant, being a remarkably free and constant bloomer and of easy culture. One of the most valuable Roses of recent introduction.



Etoile de Lyon.

Coquette de Lyon. A lovely Tea Rose exquisite canary-yellow; clear translucent texture and delicious perfume; flowers large; fine form; very full and double.

Devoniensis. Beautiful creamy white and rosy center; large; very full and double; delightfully sweet Tea scent. One of the finest Roses.

Duchess of Albany. A sport from the well-known and popular La France. While it resembles its parent in several respects, it is quite distinct in color, being of a rich, deep, even pink tint, and the shape is more finished; it is equally vigorous, free-blooming and fragrant; one of the most important of recent acquisitions for growing in the open air or for forcing.

Etoile de Lyon. A grand Rose for forcing, of superb form and habit; color rich saffron-yellow, brighter in the center; very large and full, blooming profusely; grows vigorously.

Empress (Kaiserin) Augusta Victoria. An extra fine white variety, faintly blended with cream color; very large, full and double, almost perfect in form, and it continues beautiful even when fully expanded. Its fragrance is a combination of tea and magnolia, and is very delightful and distinct from that of any other variety. Beautiful glossy foliage; a vigorous grower and very free-flowering, blooming at every shoot. We consider it one of our best outdoor kinds.

Gloire de Dijon. Fawn, with salmon; blooms all summer.

TENDER PERPETUAL ROSES, continued

Hermosa. Brightrose; a most constant bloomer; hardy; one of the best.

Isabella Sprunt. Bright canary-yellow; large, beautiful buds; valuable for cut-flowers; very sweet Tea scent; profuse bloomer.

La France. Raised from seed of a Tea Rose; delicate silvery rose, changing to silvery pink; very large, full, of fine globular form; a most constant bloomer; the sweetest and most useful of all Roses; none can surpass the delicacy of its coloring.

Madame Falcot. Fine apricot-yellow, with beautiful orange buds; most valued for bouquets; tea-scented; a constant bloomer; medium size and fullness.

Madame Margotten. Very large; perfectly double, elegantly perfumed; color beautiful dark citron-yellow, with bright red center; a strong grower and quite hardy.

Madame Caroline Testout. A beautiful bright yet clear pink Rose, and very much resembles La France, from which it undoubtedly originated. It is of more sturdy habit, however, and exceedingly floriferous, and the individual blooms are often much larger than those of La France. It maintains its beautiful color at all seasons; handsome foliage; stem stout; fragrance very delicate.

Madame Joseph Schwartz. White, beautifully flushed with pink. The plant grows with great vigor, and is extremely free with its flowers, which are of medium size, cupped and borne in clusters.

Marechal Niel. Deep yellow; very large; very full, globular; highly scented. Requires careful treatment. It should be severely pruned. The finest yellow Rose.

Marie Guillot. Color pure snow-white; sometimes faintly tinged with pale yellow; extra large size; full and double; very sweet Tea scent.

Marie Van Houtte. White, slightly tinged with yellow, large and full. In every way a most charming sort.

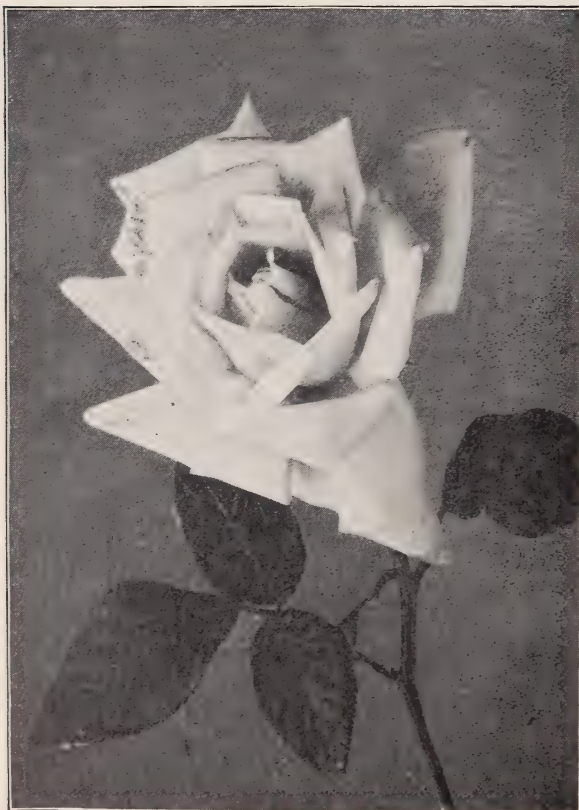
Manda's Triumph. This grand Rose is of free growth, luxuriant foliage, and produces large clusters of double, pure white flowers, beautifully imbricated and well formed, 2 inches in diameter and sweet-scented.

Meteor. Everblooming Hybrid Tea; a healthy, vigorous grower, free-blooming, and of a rich crimson color.

Niphetos. Pale yellowish white, often snow-white; long, large buds; very beautiful.

Papa Gontier. A popular Tea Rose, very free-blooming; long, pointed buds of a glowing carmine-crimson color. It is delightfully fragrant.

Perle des Jardins. A beautiful straw color, sometimes a deep canary; very large, full and of fine form. A very free bloomer. Steps at once into fame as the finest yellow Rose we have in our collection



La France.



Single Roses.

TENDER PERPETUAL ROSES, continued

Pink Roamer. This is without question a hybrid between the Sweetbrier and Wichuraiana, and carries these characteristics in bloom, while the growth, which is very rampant, and the luxuriant foliage partake more of the Wichuraiana. The single flowers, which are produced in close heads, are nearly 2 inches in diameter, bright rich pink, with almost a white center, which lighten up the orange-red stamens, producing an effect, which, combined with fragrance, makes it one of the most valuable Roses in cultivation.

Safrano. Saffron and apricot. A very free bloomer. One of the oldest and best varieties, especially when used in the bud state.

South Orange Perfection. Blush pink at tips, changing to white; double.

Souvenir de la Malmaison. Pale flesh, with a fawn shade; large, full, beautiful.

The Bride. A magnificent pure white Tea Rose. The flowers are large and very double, on long, stiff stems, and last a long time in a fresh state after being cut. One of the best. Tender.

Triomphe de Luxembourg. Salmon-buff, shaded with deep rose; distinct and fine.

Universal Favorite. This is the most vigorous plant of the set. The long, branching shoots are covered with dense,

bright green foliage. The double flowers are over 2 inches in diameter, and of a beautiful rose color, similar to the Bridesmaid, and deliciously fragrant. A grand variety for any purpose.

William Allen Richardson. A new variety; of strong growth and climbing habit; color rich, coppery yellow, flushed with carmine, large, full and fragrant.

Wichuraiana. A distinct and valuable variety from Japan; it is a low, trailing species, its stems creeping on the earth almost as closely as the ivy. The flowers are produced in the greatest profusion in clusters on the end of every branch, after the June Roses are past, from the first week in July throughout the month. They are pure white, $1\frac{1}{2}$ to 2 inches across, with yellow stamens, and have the strong fragrance of the Banksia Rose. It is quite hardy, with the exception of the latest immature growth, which may be cut back to some extent. This variety has proved valuable as a covering for banks, rockeries, etc., and for use in cemeteries.

MICROPHYLLA ROSES

Alba (White). Pure white, strong grower, constant bloomer, small, glossy foliage.

Rubra (Pink). Similar in growth and form to Alba.

**Clematis paniculata.**

Photo at "Mapleton," residence of W. T. Hood.

Vines and Creepers

AMPELOPSIS

Veitchii. Recently introduced from Japan; grows rapidly and attaches itself firmly to walls; the leaves are small, turning to brilliant red in the autumn.

CLEMATIS. Virgin's Bower

This is unquestionably one of the handsomest classes of vines for covering arbors, trellises, pillars, etc., that has been introduced. They are slender-branched, rapid growers, with handsome foliage and beautiful flowers, ranging in color from white to deep purple.

Henryi. Large; free grower and bloomer; flowers creamy white; one of the best.

Jackmani (Jackman's). Without a doubt the best yet introduced, and a general favorite; large, velvety, dark violet-purple; strong and hardy.

Mad. Edouard Andre. This is the nearest approach to a bright red Clematis, and has been called the Crimson Jackmanni. The plant is a strong, vigorous grower and very free in bloom. Color a distinct crimson-red; a very pleasing shade and entirely distinct from all other varieties.

Paniculata. From Japan. Panicles of small, pure white fragrant flowers borne in great profusion. Very desirable and entirely hardy. Blooms in late summer.

HONEYSUCKLE

Hall's New Japan. A strong, vigorous evergreen sort; flowers white, changing to yellow; very fragrant, and is covered with flowers nearly all summer and autumn. The best of all the Honeysuckles.

Japan Evergreen (Woodbine Honeysuckle). A very vigorous grower, with numerous white and yellow fragrant flowers.

Chinese Twining. An old favorite, holding its foliage through the winter; flowers red, yellow and white variegated; very sweet.

IVY

English. A beautiful vine, with dark green leaves that climbs over brick, stone or wooden walls or chimneys without any support. A hardy evergreen.

WISTARIA

Chinese. One of the most elegant and rapid-growing of all the climbing plants; attains a very large size, sometimes growing 15 or more feet in a season; has long racemes of pale blue flowers in spring and sometimes in autumn.

White-flowering. Like the preceding, except that the flowers are pure white and single.

Testimonials

"I have handled trees as a business for twenty-four years. I have never seen any trees that I thought better, and but few that I thought as good as yours, and in addition to this I have planted trees by the thousand for myself, and the trees I bought of you have done better than any I ever planted. I would also like to refer to your system of packing—I think it the best I ever saw."—J. L. MILLAN, Fairfax, Va., *July 16, 1904.*

"I wish to compliment you on the size and quality of trees bought of you last spring. Out of 175 trees I find at this date all growing except one apple and one peach. Amsden June Peach trees purchased of you spring of 1903 are bearing this year."—JOHN HOAGLAND, Falling Spring, West Va., *July 18, 1904.*

"I have been buying trees and shrubs from your agent, Mr. Livesay, and find them all O. K. No one need hesitate to buy your trees."—J. W. BEARD, Falling Spring, West Va., *July 18, 1904.*

"I have been delivering your stock in Union county, Ill., for the last fourteen years, and have come in contact with a great many men who have brought your trees to maturity and are perfectly satisfied, as the trees have proven true to name and I have yet to find a man who is not satisfied since his trees commenced to bear. Your stock is always fine-looking on arrival and thrifty in growth, and always pleases the purchasers, who remark when they first look at their trees: 'Well, they are the finest-looking trees I ever saw.' There are hundreds of men and women in this county who are ready to recommend your nursery stock."—J. W. ROY, Anna, Ill.

"Will say that all the nursery stock I have sold for you has given entire satisfaction. I am selling many of the customers again."—JOHN WALLIS, Fort Payne, Ala., *July 17, 1904.*

"I will just say in behalf of your nurseries and myself: I am a fruit-grower and am selling nursery stock—have made it a business for the last fifteen years—but have never had any stock to give my customers and myself so much satisfaction and pleasure as your trees have—both in quality of stock sent out and fruit produced."—J. R. CRIST, Lexington, Va., *July 25, 1904.*

"I have now been handling your trees for fifteen years and during that time have come in contact with many other nursery agents delivering their stock at the same time, and find yours superior, both in average size and the fresh, healthy condition in which they arrive—because of the better care exercised in packing—to any I have yet seen."—J. W. KRICHBAUM, Birmingham, Ala., *July 18, 1904.*

"I have handled your trees for a number of years and consider them the best on the market. They have given universal satisfaction in this section."—L. N. FOSTER, Pendleton, Va.

"I commenced working for W. T. Hood & Co. in the spring of 1887 and have worked for them every year since, working the same territory and adding new territory every year. Each year I work Gibson, Crockett and Obion counties, Tenn.; Hickman and Fulton counties, Ky.; Mississippi county, Mo.; Union, Jackson and Williamson, and part of Johnson and Marion counties, Ill. My sales increase every year. I have a long list of customers to whom I have sold as many as seventeen bills. They all say it is the best stock they ever bought. They know in ordering of W. T. Hood & Co. they will get stock true to name, and the only whole root stock they ever saw. My customers will patronize no nursery except the Old Dominion."—W. J. MCDERMON, Jonesboro, Ill., *July, 1904.*

"I bought 100 apple trees from W. J. McDearmon, agent for W. T. Hood & Co., Richmond, Va. My trees have borne fruit—Red June, Early Harvest, Buckingham and Wine-sap. The apples were the largest and best colored I ever saw, and the trees show that they are grafted on whole roots. The fruit was just what I bought."—J. N. MANGRUM, Gadsden, Tenn., *March 25, 1893.*

"The trees received from you for delivery were as fine as any nursery sends out—no question about that—and the packing extremely good, the roots being splendidly taken care of and perfectly mossed."—F. R. JOHNSTON, Plymouth, N. C.

"I take pleasure in saying the fruit trees I bought of you have been very fine. It has been rare for me to lose any. I have planted alongside of those bought of you trees from other nurseries. Yours are by long odds the best."—J. M. LEAKE, Ashland, Va.

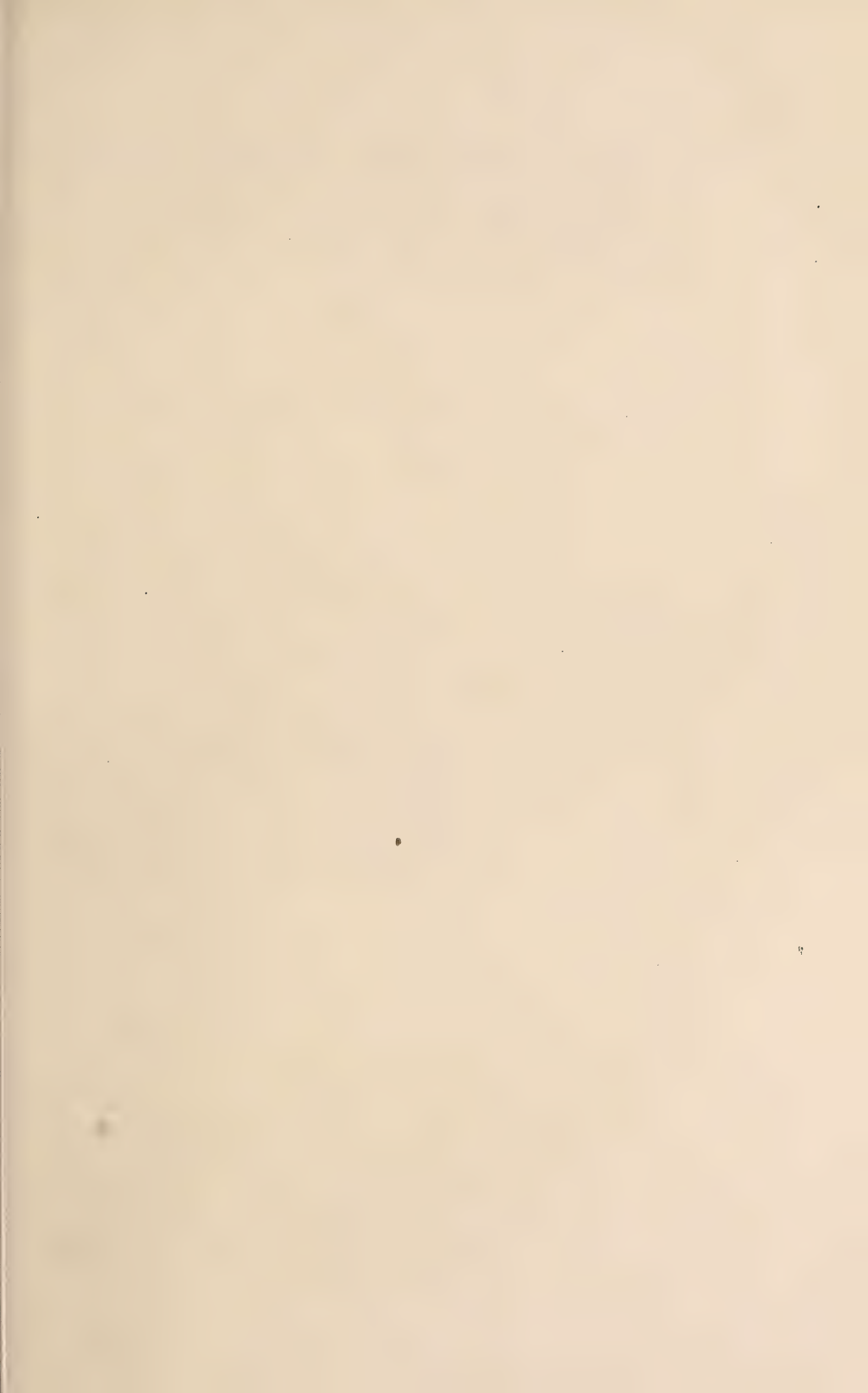
"Of your stock compared with others, I will say I made two deliveries this fall and assisted in another for you, and think I have had a fine opportunity of comparing yours with other nursery stock in and out of this state, and I find your stock to be far superior to any I have seen. All customers say your trees are far ahead of those bought from other nurseries. You pack your trees in such a way that they are as nice and fresh when the box is opened as when dug. I also find where they have borne that they are true to name."—B. I. BICKERS, Stanardsville, Va.

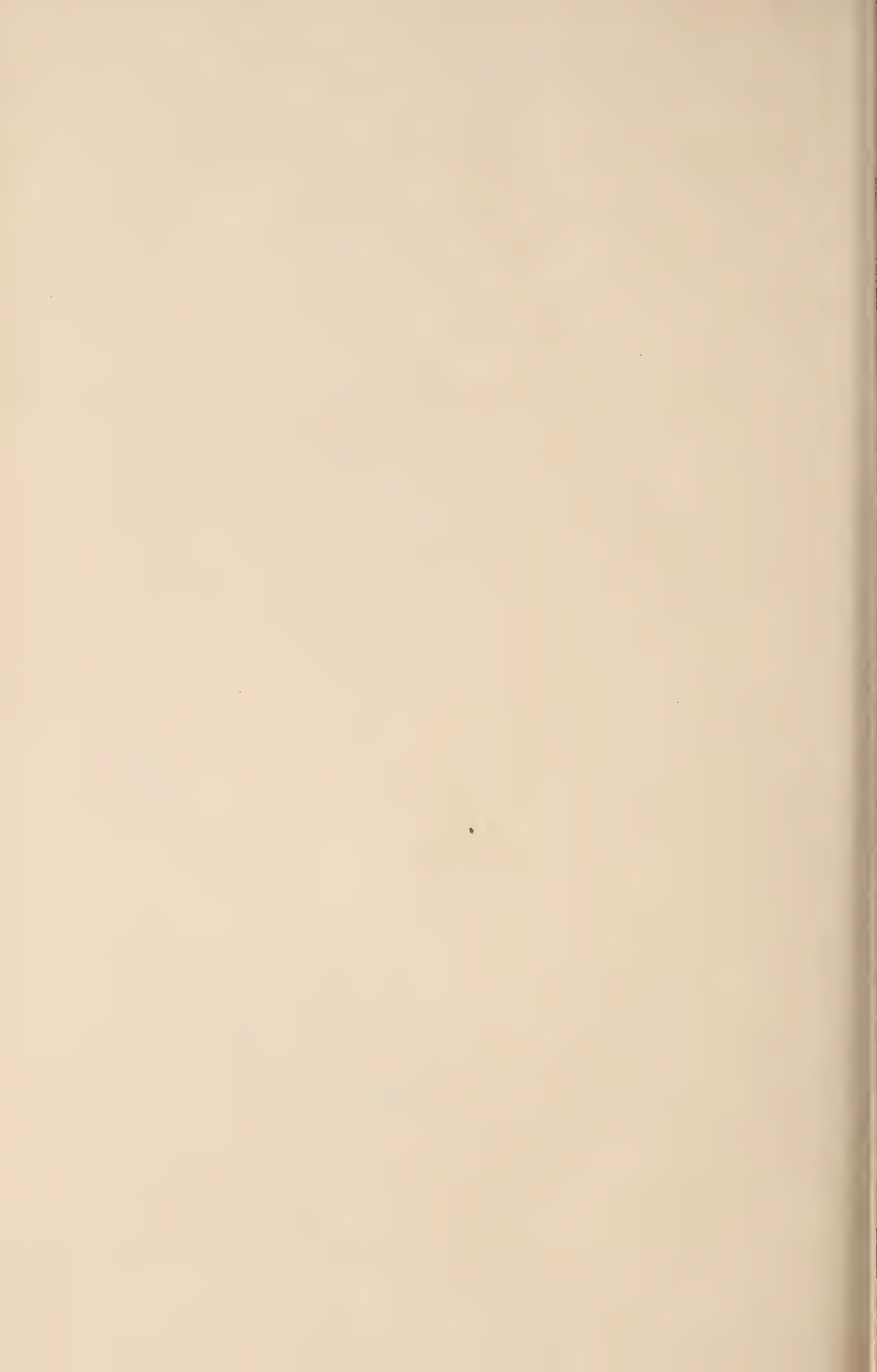
"The trees were exceptionally fine and healthy and are all growing very well."—JOSEPH M. BROWN, Atlanta, Ga.

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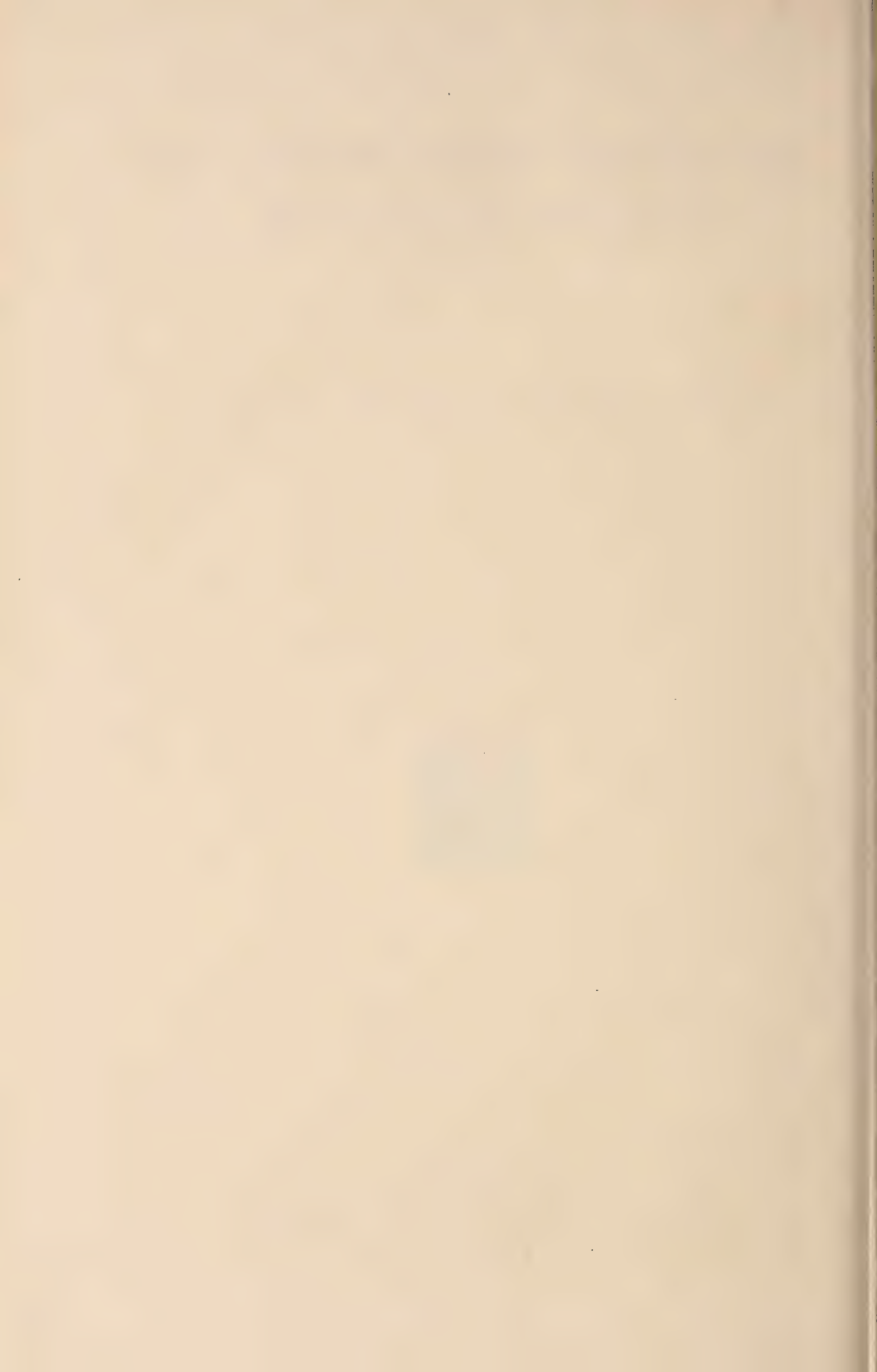


MODERN METHODS IN FRUIT-CULTURE

A BRIEF OUTLINE OF THE BEST PRACTICE



PUBLISHED BY
J. HORACE McFARLAND COMPANY
HARRISBURG, PA.



Fruit-Growing

FOR PLEASURE AND PROFIT



WE Americans are a fruit-loving people. We also love to grow fruit. It is unquestionably true that America leads the world in the production of fruit in large quantities, and in the perfection with which it is distributed to distant points. That the United States is destined to become, if it is not already, the leading fruit country of the world, can no longer be doubted. The climate of our country is congenial to fruits; it has extensive and varied areas available for their growth; our fruit-growers have more help from scientists and national and state governments than the growers of other countries; the consumption of fruit is increasing enormously among our people; the export trade is opening up great possibilities. With so much encouragement, the grower who does not rise to the occasion and plant and prune and spray and harvest with redoubled energy would seem but a poor creature.

The nurseryman, too, feels the stimulus of great things going on. His acres of young trees must be doubled to meet the demand for them. They receive loving care in the best of tillage, pruning and training. For him they have much individuality, although grown by hundreds. He would like to think that every one prospered in the orchard whereunto it was sent and bore bountiful crops of fruit. The success of the trees and the success of the fruit-grower mean his own success also, and that good work is receiving acknowledgment.

In the course of the year the nurseryman answers many questions from his friends the fruit-growers and the home gardeners. In the busy season he has not always time enough to answer them so explicitly as he would like. This little book is sent out as a friendly personal answer to many, and as an authentic outline of the best methods in modern fruit culture. Too many of the books that have preceded it spread the impression that fruit-growing is entirely easy and simple,—nature does the most of it. People would not buy many fruit trees and plants if it seemed much trouble to take care of them. But the trees and plants sent out under such auspices did not thrive. They became discouraged and so did their owners. If fair culture had been insisted upon as essential to success, the owners of those trees might have been enthusiastic owners of large orchards, or of delightful fruit gardens, ere this. No industry is more worthy of enthusiasm. Among the greatest of all cultures in horticulture, with fruit-growing as a most enjoyable and flourishing branch. The nurseryman hopes that every one who receives this little book will accept with it his best wishes for a prosperous season,—meaning a bountiful supply of “fruit every day in the year from your own garden,” with plenty also to give away and to sell.

ORCHARD OR TREE FRUITS

The orchard is an important part of every American homestead. Even the small village garden has its plot of fruit trees. Furthermore, in fruit-farming for profit the tree fruits necessarily take first place. The wide interest now manifested in this sort of farming, and the profits arising from it, have been shown in the preceding page. Every man who own a few trees may share these profits if he cares for his trees rightly. How to plant, prune and tend them that they may yield an abundance of fruit for home use and a surplus for market, is briefly told below.

Locating an Orchard.—The matter of orchard sites does not now receive so much attention as formerly. Usually it is necessary to make the best of soils and sites near

at hand. A professional fruit-grower is apt to seek an orchard site near a rich market rather than a favorable site far away from market, though near markets are not so necessary to profits in growing tree fruits as with berries, etc. So many shrewd and energetic growers have succeeded even under unfavorable conditions that the site question is not now much discussed. Even some abandoned farms of New England have been made to yield bouncing crops of big red apples on their rocky hillsides. The matter of protection from late spring frosts is the chief point to be considered in locating an orchard. A northern slope that will retard the blooming of trees in spring, or an elevated one that has frost drainage, or one rendered equable in climate by nearness to some large body of water,—any of these are favorable sites.

Modern Orcharding lays much stress on the thorough preparation of the land before fruit trees are planted. Its drainage must be good, its soil deep, fine and rich as for any other crop. Hard clay lands should be well prepared by twice plowing, at least, beforehand, using the subsoil plow after the common one at the second plowing. On fresh, new lands, manuring will be unnecessary; but on lands exhausted by cropping, fertilizers must be applied, either by turning in heavy crops of clover, well-decomposed manures, or by applying commercial fertilizers. Very little digging of holes will then be necessary at planting time.

Tree-pruning at Planting Time is of much importance. As a general thing trees are planted in the orchard precisely as they came from the nursery. Even with the present system of frequent nursery transplanting and the most careful digging of trees, some roots will be broken and destroyed, destroying also the balance that existed between the top of the tree and its roots. This can and should be restored by a proper pruning of the top. The roots, too, should be well shortened back on all trees, that they may start more readily into new growth. Any that seem bruised, decaying or dried, should be cut back to sound wood.

Standard trees have two or three feet of bare stem, with a head formed by a number of branches. These should all be cut back to within three or four buds of their base, to lessen the demand for sap upon the roots and allow the remaining buds enough sap to grow vigorously. Trees of extra size must be pruned proportionately. If the branches seem over-abundant, cut some out entirely and shorten the others as above.

Dwarf trees of two or three years' growth at planting time should have their lower branches shortened less than the others, say about one-half, pruning gradually closer toward the top, until the upper branches around the leading shoots are cut back to within two or three buds of their base. The leader must be shortened back one-half or more. Trees that have suffered in transit need even closer pruning.

One-year trees that have branches are allowed to retain only the strongest and best placed of these at planting. Their weak, thin spray is entirely cut away, and the branches left are cut back to two or three buds. Yearlings that have no branches are cut back in proportion to their growth,—about half if the shoot is strong, more than that if it is weak. Even for standard trees low trunks are now considered much the best. It is better to cut too low than not low enough, if the tree is to be a dwarf or pyramid, for if the first tier of branches is not low enough the pyramidal form cannot afterward be perfected.

Pruning after Planting is detailed for each different kind of fruit in the pages that follow. It is best, as a rule, to allow each variety of tree to take its own natural or normal form, pruning just enough, so far as shape is concerned, to remove any unusual or unsymmetrical growth. Violent pruning is needed only on neglected trees, to bring them back in bearing condition, or to renew their tops. Unless he knows where the fruit buds are borne, the pruner may destroy too many of them. Trees planted on heavy and very fertile soil, and trees planted closely, require more pruning than others. The more a tree is headed-in, the thicker it becomes in the top and the more inside pruning is necessary. Fruit-rot in Plums and early Peaches is sometimes induced by dense tops. A thorough and systematic thinning out of weak, imperfect and interfering branches, making it possible for all the fruit to ripen, and for spraying and fruit gathering to be done satisfactorily, is the most rational pruning. The best time to prune is in late winter or early spring. The colder and drier the winter climate the later it should be delayed.

Tree Planting is made easy by a thorough preparation of the soil. For orchard trees, a plow checks out the rows at required distances, and it is necessary only to deepen the intersection of the rows somewhat, to set the trees in, spreading their roots carefully, and to replace the soil firmly. Where trees are planted in dooryards, or on rough hillsides where plowing cannot be done, more work is necessary. Even a little tree loves a big hole, wide enough, at least, to allow natural spreading of its

roots, and deep enough to allow them as much covering as they had in the nursery. The finest and best of the surface soil should be filled in carefully over the roots, filling in every chink of space between them, and bringing every little root fiber in close contact with fresh, moist soil. It is necessary to have the tree held steady and straight during this process, and to press the soil down firmly as it is thrown in, either with the foot or a heavy blunt stake. Early in fall, late in spring, or, if the soil be very dry, at either time, it is a good plan to settle the soil around the roots of young trees with a pailful of water poured in just before the last few shovelfuls of earth are put in place around it. Trees should not be set deeper than they stood in the nursery. Trees on dwarf stock should be set so that the union of stock and cion is covered three or four inches deep. In very dry, gravelly soil, the hole for trees should be dug twice the usual size and depth, and good loamy soil used in filling them.

Staking and Mulching are often beneficial, often necessary in dry, wind-swept situations. The stake should be planted with the tree, to which it can be tied in such a way as to avoid chafing. To prevent this, bits of matting or cloth can be wrapped around the stake at the nearest point of contact. Apply a mulch of rough manure or litter five or six inches deep over the tree roots soon after planting, spreading it about a foot wider than the roots extend. This will keep the ground from baking or cracking, by retaining moisture, and will also maintain an equable temperature around the roots.

Trees that have Suffered in Transit should be restored to their normal condition before planting. If they are frozen, place the packages, unopened, in a cellar or some cool, frost-proof place until thawed, when they can be unpacked and either planted or bedded firmly in a trench until a favorable time for planting. The freezing will not injure them when treated thus. Trees are often wintered in trenches, and, if the trenches are deep, and the roots well spread out and deeply covered, they are perfectly safe. In cold climates they should have a position sheltered from winds and a dry soil, if they are to remain in the trench over winter. A slanting position in the trench, a mulch over the roots and a few evergreen boughs on top are other precautions for extra cold climates.

Orchard Tillage is now the rule rather than the exception. The ground is thoroughly broken before the trees are planted, and given frequent light surface tillage until the fruit on the trees is about grown. Some winter cover crop is then usually sown for plowing-in the next spring. Land that has been well prepared does not need deep plowing after the first two or three years. Cutaway harrows and other surface-working tools can be used, except on very heavy lands. The cover crops prevent the land from puddling and baking in winter and add humus when plowed in, nitrogen, also, if leguminous plants are used. Too frequent use of leguminous plants, however, stimulates too heavy growth in fruit trees. If annual crops are grown between the trees, extra applications of fertilizers will be needed. When orchards are seeded to grass, to check undue growth and induce fruitage, the grass should not be pastured or mown for hay. The clippings should remain as a mulch and fertilizer.

Fruit-thinning also deserves more attention now that there is a demand for the very best products. With Peaches, Apricots and Pears it is especially important. It should be done very early in the season, before the vitality of the trees has been taxed by too heavy crops, and while the fruit is yet small. Often it removes two-thirds of the crop; it nearly always gives a larger bulk of fruit that brings a higher price from its increased size, beauty and flavor.

Orchard Maps are convenient for reference, even if tree labels were everlasting and unlosable. Since they are quickly perishable, unless of zinc, and nearly always lost, a well-named and numbered map of both the orchard and the fruit garden is well-nigh indispensable. The notched or perforated label, strung with soft copper wire, is most satisfactory for general use. The loop that encloses a branch must be untwisted occasionally, or it will girdle the bark.

Dooryard Trees, if properly enriched and tilled, often yield as fine fruit as any, besides giving shade. Directions for planting them have already been given. Until they begin to bear, at least, the grass should be kept down about their roots for a space as wide as the branches extend. Rake the soil into a loose, fine tilth in spring, and then mulch it heavily with grass or some other unobjectionable material. Dressings of wood ashes or complete commercial fertilizers should also be applied once a year before stirring the soil.

Orchard Fertilizers should be liberally applied, but a study of the soil is always necessary in order to tell what fertilizers are needed. If the trees lack vigor, nitro-

gen is probably needed and may be supplied in stable manures or commercial fertilizers, or by growing legumes. It is well to remember that too much nitrogen in a soil stimulates undue growth and tends to blights, frost injury and unfruitfulness. Trees that are growing too fast can be checked by seeding down the orchard for a year or two. If they are not fruitful, the soil probably lacks potash or phosphoric acid, and these should be supplied. A careless grower will sometimes topdress his soil with fertilizers which it already holds in excess. Wood ashes, applied at the rate of 50 to 100 bushels to the acre, is an excellent fertilizer for orchards.

DISTANCE BETWEEN TREES OR PLANTS IN PLANTATIONS

Standard Apples, 30 to 40 feet apart each way. In poor soil, 25 feet may be enough.
Standard Pears and Cherries, 20 feet apart each way. Cherries will do at 18 feet, and the dwarf-growing sorts, Dukas and Morellos, even at 16 feet.
Standard Plums, Peaches, Apricots and Nectarines, 16 to 18 feet apart each way.
Quinces, 10 to 12 feet apart each way.
Dwarf or Pyramidal Pears, Cherries and Plums, 10 to 12 feet apart each way. The greater distance is better where land is not scarce.
Dwarf Apples, on Paradise stock (bushes), 6 feet apart.
Currants, Gooseberries and Raspberries, 3 to 4 feet apart.
Blackberries, 6 to 7 feet apart.
Grapes, 8 to 10 feet apart.
Strawberries (see under Strawberries).

NUMBER OF TREES OR PLANTS ON AN ACRE AT VARIOUS DISTANCES

At 4 feet apart each way	2,729	At 15 feet apart each way	200
At 5 " " "	1,742	At 18 " " "	135
At 6 " " "	1,200	At 20 " " "	110
At 8 " " "	680	At 25 " " "	70
At 10 " " "	430	At 30 " " "	50
At 12 " " "	325		

The number of plants required for an acre, at any given distance apart, may be ascertained by dividing the number of square feet in an acre (43,560) by the number of square feet given to each plant, which is obtained by multiplying the distance between *rows* by the distance between the *plants*. Thus, strawberries planted three feet by one foot gives each plant three square feet, or 14,520 plants to the acre.

SPRAYING

TO KILL INSECT AND FUNGOUS PESTS

This has now become an established orchard practice. It must vary, of course, with the geographical region, the season, the kind of fruit, and the insects or fungi to be dealt with, and these variations lead to much discussion, but every year emphasizes its importance. Fruit-growers and agricultural clubs now purchase their spraying material by the car-load direct from the manufacturer.

A veteran sprayer thus explains the efficacy of the process: "Insecticides kill by contact, or by means of a poisonous principle; their efficiency depends largely on the time and thoroughness of the application. If applied too soon they may be dissipated before the insects appear; if applied late the injury is only partly prevented, because insects feed less voraciously and are harder to kill as they approach maturity in the larval stage. With fungous diseases the case is not essentially different. The tree is covered with a thin coating which destroys spores of fungi resting there, and prevents other spores from germinating. . . . The keynote to success is thoroughness. Hasty sprinklings are worse than useless: they discourage and disappoint the beginner. Full protection is not given unless each leaf, twig and branch has been covered. The early spray is most effective, particularly in treating fungous diseases. Spray before the buds open, to get ahead of the enemy."*

* Prof. John Craig, in Cornell Bulletin.

SPRAYING PUMPS

The knapsack pump is carried on a man's back and operated by him, with one hand, while the nozzle is directed with the other. The tank is made of copper and holds five gallons. It is excellent for small vineyards and fruit gardens. The barrel pump, which may be fitted to any barrel or tank and mounted upon almost any vehicle, is also convenient for spraying small orchards and fruit plantations of from 10 to 15 acres. The gear pump, mounted on wheels, whose power it uses for spraying as they move along, is used for vineyards, bush-fruits and low-growing plants, not for orchards. For great commercial orchards the power sprayer is used. For small trees and bush-fruits the Vermorel nozzle, or fine spray type is best, while for old orchards nozzles of the Bordeaux and McGowan style are most suitable. Two or more nozzles are often attached to one discharge.

FORMULÆ

Bordeaux Mixture. Copper sulphate, 6 pounds; quicklime, 4 pounds; water, 40 to 50 gallons. Dissolve the copper sulphate by putting it in a bag of coarse cloth and hanging this in a vessel holding at least 4 gallons, so that it is just covered by the water. Use an earthen or wooden vessel. Slake the lime in an equal amount of water. Then mix the two and add enough water to make 40 gallons. The liquid is then ready for immediate use but will keep indefinitely. If the mixture is to be used on peach foliage it is advisable to add an extra pound of lime to the above formula. When applied to such plants as carnations or cabbages it will adhere better if about a pound of hard soap be dissolved in hot water and added to the mixture. Use for rots, molds, mildews and all fungous diseases.

Copper Sulphate Solution. Copper sulphate, 1 pound; water, 15 gallons. Dissolve the copper sulphate in the water, when it is ready for use. This should never be applied to foliage, but must be used before the buds break. For peaches and nectarines use 25 gallons of water. Use for fungous diseases.

Kerosene Emulsion. Hard soap, $\frac{1}{2}$ pound; boiling water, 1 gallon; kerosene, 2 gallons. Dissolve the soap in the water, add the kerosene, and churn with a pump for 5 to 10 minutes. Dilute 10 to 25 times before applying. Use strong emulsion for all scale insects, for insects which suck, as plant-lice, mealy bugs, red spider, thrips, bark-lice or scale. Cabbage worms, currant worms and all insects which have soft bodies, can also be destroyed with this emulsion.

Paris Green. Paris green, 1 pound; water, 200 gallons. If this mixture is to be used upon peach trees, 1 pound of quicklime should be added. Repeated applications will injure most foliage unless lime is added. Paris green and Bordeaux mixture can be applied together with perfect safety. Use at the rate of 4 ounces of the arsenites to 50 gallons of the mixture. The action of neither is weakened, and the Paris green loses all caustic properties. Use for insects which chew.

Hellebore. Fresh white hellebore, 1 ounce; water, 3 gallons. Apply when thoroughly mixed. This poison is not so energetic as the arsenites, and may be used a short time before the sprayed portions mature. Use for insects which chew. Can also be used dry by dusting on plants.

London Purple. This is used in the same proportion as Paris green, but as it is more caustic it should be applied with two or three times its weight of lime, or with Bordeaux mixture. The composition of London purple is exceedingly variable, and unless good reasons exist for supposing that it contains as much arsenic as Paris green, use the latter poison. Do not use London purple on peach or plum trees unless considerable lime is added. Use for insects which chew.

Lime, Sulphur and Salt. Stone lime, 15 to 30 pounds; flowers of sulphur, 15 pounds; salt, 15 pounds; water, 50 gallons. Slake the lime in a small quantity of hot water, gradually adding and thoroughly stirring in the sulphur. Dilute the mixture with 12 gallons of water and boil in an iron kettle or cook by steam in a covered tank or barrel for one and one-half hours. Then add salt, continuing the boiling for one-half hour more. Fill the vessel up with water to the required 50 gallons. Strain, wash through a fine-mesh strainer, and apply hot. In using an iron kettle, keep the mixture vigorously boiling and thoroughly stirred to prevent caking and burning of materials. Wash cooked by steam is more easily prepared and better made. Apply wash just as the buds begin to swell in the spring. Cover all parts of the tree with a heavy coat of the wash. The wash seems best adapted to orchardists who have not yet learned to use petroleum with safety or are afraid that their trees are

beginning to show injury from the oil or will not stand many more applications of it. *It is especially recommended for the treatment of peach trees.* It is believed that the substitution of one and one-fourth pounds of blue vitriol dissolved in hot water for the salt results in a quicker-acting wash. This formula is known as the Oregon Wash. Use for scale and fungous diseases.

POINTS ON SPRAYING*

1. The San José scale can be controlled in a plantation by a 20 per cent kerosene and water mixture when the plant is thoroughly sprayed. Early spring or late fall spraying is preferable, but the material may be applied when the plant is in full leaf if the day is sunshiny.
2. Only on sunshiny days should sprays of kerosene and water be used.
3. Compared with fumigation on growing trees, spraying is cheaper, simpler and perhaps equally effective in the long run. Nurserymen will find fumigation better adapted to their needs than spraying. On growing plants, however, it is attended with difficulty because of the necessity of providing tents.
4. Paragrene, green arsenite, green arsenoid and arsenite of lime are equal, if not superior, to Paris green in insecticidal value. The reduced price of these substitutes will commend them. Arsenite of lime can be made at home.
5. Bordeaux mixture is liable to injure the foliage of the Japanese plums, but no better fungicide for spraying this class of fruit is now known. To avoid injury, use a very dilute mixture.
6. Varieties of fruit differ in their susceptibility to injury from sprays.
7. Unless lime is added, a simple solution of copper sulphate as strong as 4 ounces per barrel, cannot be used without injury to the foliage of many fruit trees.



HOW TO PREPARE FRUIT TREES FOR PLANTING

Illustrations showing how they should be pruned before planting. In each case an example is given of an unpruned and a pruned tree. No. 1, **Standard**, with stem or trunk three or four feet clear of branches. Standard Apples, Pears, Cherries and Plums have usually this form. No. 2, **Peach Tree**. No. 3, **Dwarf Pear**. The usual appearance of trees, two to three years from bud, prepared for training in pyramidal form. No. 4, **Quince Tree**.

* Cornell Bulletin, No. 177.

THE APPLE

Commercially, the Apple is of great and growing importance. The demand for the fruit seems to double with the number of trees planted. It is the handsomest of all the larger fruits and the one upon which we depend most for home enjoyment. "Fruit every day in the year from one's own garden," would hardly be possible without it.

The Apple tree is of sturdy habit, growing and bearing after a fashion even under neglect and in unfavorable locations. With intelligent culture it forms a stout trunk and broad spreading top that soon assumes a half-drooping habit from the weight of bountiful crops borne every year. It is one of the longest-lived of all our fruit trees when given fair treatment, and Apples are the longest-keeping of all our fruits. The spring bloom of the trees is so beautiful as to deserve a celebration such as is given to cherry blossoms in Japan.

Rolling, inclined, or somewhat elevated lands make fine sites for Apple orchards, because they have the advantage of better drainage for both water and air than low lands. If they have a soil of good clay loam the conditions are ideal, yet, failing these, fine Apples may be grown on any soil that is well drained, if it is thoroughly prepared, kept fertile, and the trees are properly pruned and protected from insects. In wild, undeveloped sections of the country fruit pests are not troublesome. They increase with the population and the planting of many trees. It is these conditions, however, which give fruit the market value that makes it well worth while to spray and prune and fertilize.

Apple trees may be planted in fall or in spring, 30 to 40 feet apart each way, for standard trees in orchard culture and in favorable locations. Crab varieties and those of medium growth, like the Wagener, may be set closer. In poor soils and unfavorable locations 25 feet give space enough. Apple trees do not grow so large on the plains, or in the South, as in the North and Northwest. The thorough preparation of the orchard and the careful planting of its trees have been urged and outlined in a preceding chapter. In the fruit garden and dooryard, Apple trees may be planted 5 to 10 feet apart, according to the stocks on which they are grown and the training they are to be given. Dwarf trees on Paradise stock may be planted 5 to 6 feet apart and will develop into beautiful little bushes, or may be trained as espaliers. In small village gardens many more of the Dwarf Apples should be planted, as they take up little room and usually begin to bear the second and third year after planting. To see such large and handsome fruits on such little bushes gives one a new enthusiasm for fruit-growing.

Whatever the soil or location, the planter of an Apple orchard should make up his mind to devote it entirely to the production of Apples, and not to follow the usual plan of expecting the land to grow both trees and other crops, or to furnish hay or pasturage for stock. The complaint that we cannot grow Apples as we formerly did is largely due to the fact that other crops have taken from the soil the fertility needed by the trees. Planters realize that it may be necessary to fertilize land for corn or wheat, but imagine that orchard trees can take care of themselves, like the trees of the forest. The carrying out of such ideas will result in starveling trees and little fruit.

If the orchard site has been well prepared, no great amount of work will be required in planting the trees. A frequent answer to the question as to how large the holes in which certain trees are to be planted should be, is "as large as the orchard." It is easier to dig with a plow on a large scale than with a spade on a small one. In planting Apple trees on average fertile soils, check out the land 30 feet apart each way. If the location is in a noted Apple region, or the land is very fertile, increase the distance up to 35 or 40 feet. On steep lands and mountain sides, that cannot be prepared in the usual way, the trees should be planted on the level contour of the hillside, so that in cultivation there will gradually be formed terraces to prevent washing. Where the land is full of loose rocks it is a good plan to place them along the lines of the trees to check the downward flow of water and to catch the soil above them, thus taking them, also, out of the way of cultivation.

For the first few years after planting, the Apple orchard needs as clean and careful cultivation as any farm crop. Indeed, throughout its life tillage should be the general purpose, but when the trees seem to be growing too fast, at the expense of fruit-buds and spurs, fruitfulness may be induced by seeding down for a time. If annual crops are grown in the orchard while the trees are small, fertilizers should also be applied, and every year a more generous space should be left about the trees. Till as often as the surface of the soil becomes crusted or baked. On strong soils, well handled, it is not often necessary to apply concentrated fertilizers until the trees are old enough to bear. Their growth and bearing must be the guide as to amounts

and kinds. As a rule, all orchards in full bearing should have a liberal annual application of fertilizing materials. A full crop of Apples removes more potash than a good wheat crop, and large percentages of other plant-food. Therefore, if good Apples are wanted, be sure that food for making them is present in the soil. An orchard in grass should be mown several times during the summer and all the cut grass left to decay as a mulch, to replace soil fertility, instead of removing it, as when the grass is pastured or fed to animals. Then, if the orchard grass is given an annual dressing of acid phosphate and potash, its growth will be fine. The mowings will form a deep mulch to protect the trees from drought, and the falling fruits will be unbruised. There is no place where the home accumulation of wood ashes will pay better than on the Apple orchard.

Little hard pruning will be needed for Apple trees that have rightly begun their existence. The shoots made the first season after planting should be shortened back, cutting close above a bud. If the growth seems likely to be too spreading, cut to a bud on the inside; if too erect, cut to a bud on the outside. Keep all sprouts rubbed from the stem and all water-sprouts from the center of the tree. When the head is once well formed no cutting will be needed. Unless wood can be kept away by rubbing before it is so large as to need cutting, one of the oldest pruning rules is still one of the best ones: "Never cut a branch from a tree unless you have a good and definite reason for cutting it." The pinching back of soft, summer growth, for symmetry of head and proper distribution of branches, reserves the forces of the tree for fruit-bearing; the pruning away of many large branches wastes it.

Apple Tree Enemies.—Two of the commonest and most pestiferous are the larva of the codling-moth, called appleworm in some sections, and the Applescab. The first is readily held in check by spraying with the arsenical poisons detailed under Spraying immediately after the bloom has fallen. For the scab, spray with Bordeaux mixture as soon as the buds are fairly opening, earlier if the section is badly infected with scab. Paris green or other arsenical poisons, added to the Bordeaux for this earlier spraying, will kill such insects as the bud-moth, canker-worm, case-bearer, etc., that appear before the buds open. Spraying must be repeated oftener some seasons than others, the number of times depending upon the thoroughness with which the work is done and the numbers or persistency of the pests to be routed. The two sprayings with combined Bordeaux mixture and arsenites, just before the flowers open and just after they fall, will be needed almost every season in sections where insects and fungus diseases are troublesome.

Apple Thinning is profitable only with early or fancy varieties, or near some market that pays high prices for superb fruit. Fruit thinning of all sorts is treated in a preceding chapter. Usually it pays to pick the earliest varieties of Apples successively, removing the largest and best-colored specimens at intervals, which is equivalent to thinning. After the "June drop" of imperfect young fruits any trees that carry too heavy crops should have them lightened, or they would probably bear no crops at all the next year, and, besides probable injury by storms, would be generally enfeebled so as to become a prey to insects and diseases. Do not wait until the fruit becomes large and heavy before thinning it. It is much more profitable to thin fruit than to put props under branches.

With good treatment Apple trees should be in profitable bearing at ten years from the time they were planted and yield good returns for thirty years or more. Hale and profitable old trees twice that age are common in good Apple sections. Prof. L. H. Bailey gives as the most perfect Apple region of the country, "considering productiveness, quality, long-keeping attributes and longevity of tree, that which begins with Nova Scotia and extends to the West and Southwest to Lake Michigan. Other important regions are the Piedmont country of Virginia and the highlands of adjacent states, the Plains regions, the Ozark and Arkansas region, and the Pacific region, the last comprising the foothills in California and the country to the northward. All parts of the United States north of Florida and the Gulf borders, and excluding the warm-temperate parts of the Southwest and the Pacific coast in greater or lesser degree. North America is the leading Apple-growing country of the world. A full crop for the United States and Canada, of all kinds and grades, is probably not less than 100,000,000 barrels."

Important Commercial Varieties.—North American leaders for various sections, are Albemarle Pippin, American Golden Russet, Astrachan, Baldwin, Ben Davis, Blue Pearmain, Duchess of Oldenburg, Fameuse, Grallflower, Gravenstein, Janet, King, Lawver, Maiden's Blush, Missouri Pippin, Newtown Pippin, Northern Spy, Peck's Pleasant, Rhode Island Greening, Rome Beauty, Shockley, Twenty-Ounce, Wealthy, Willow Twig, Wolf River, York Imperial. Baldwin and Ben Davis, on

account of their yield, regularity of bearing and fine keeping and shipping qualities, are the staple market sorts, though several better-flavored sorts, of recent introduction, are candidates for their places.

Marketing, next to growing, is the most important feature of the Apple trade. After thorough sorting and grading, which frequently doubles the price of fruit, the market package comes in question. Those who study the market closely say that for the staple varieties of Apples in general trade the properly faced, tightly filled barrel may be the best package, but for the personal customer, and particularly with all the finer or dessert sorts, a small package must come into use. "It is, in fact," says a noted pomologist, "a question whether the bushel box would not be better for even the staple Apple trade. In most parts of the world, except in the central and eastern part of the United States, Apples are not handled in barrels."

THE PEACH

The Peach thrives over a surprisingly wide range of territory and in a great variety of soils. It is our great dessert fruit, and next to the Apple in commercial importance. Almost every state in the Union has profitable Peach orchards. On any soil that is well drained good Peaches may be grown. On very light and sandy soils they thrive better than most fruits, some authorities considering soils of this character the very best for Peach trees.

Orchard Sites.—The site for a Peach orchard should be either comparatively exempt from late spring frosts, or such as to retard their naturally early spring bloom. Late spring frosts are less likely to occur near large bodies of water, because the water makes more uniform the surrounding climate, and adjacent areas do not warm up so quickly in the spring. Fertile mountain coves in high altitudes also make ideal Peach orchards that rarely fail to produce good annual crops. A northern slope is good because it retards bloom. In city and suburban gardens the Peach trees should be planted on the north side of buildings, that they may not bloom too early. In the home fruit plot, dooryard or garden, small standard Peach trees can be planted 10 to 12 feet apart. In commercial orchards they are planted 15 to 20 feet apart each way, 20 feet being the standard and maximum distance in the East.

Pruning.—In planting Peaches, it is of the greatest importance to cut back the trees severely,—the stem about one-third and the side branches to one bud each. This lessens the demand upon the roots for sap, and enables the remaining buds to push more vigorously. Many failures in newly planted orchards may be ascribed to neglect of this pruning. In subsequent pruning it should always be remembered that the fruit is borne on wood of the last year's growth, and hence the necessity for keeping up a good supply of vigorous annual shoots all over the tree. Shoots of the previous year's growth should be shortened back every spring, cutting weak ones back about one-half, strong ones one-third. Weak and superfluous shoots should be removed entirely. In this way the heads can be kept round, full and well furnished with bearing wood. They should be low, with branches starting not more than three feet from the ground. In some of the more successful commercial orchards half the crop of Peaches on good-sized trees can be gathered from the ground. The fruit in the center of the trees will not ripen and color properly unless the weak inner shoots are removed. In some Michigan orchards the thinning of this wood is all the annual pruning given until the trees show signs of reaching their limit of productiveness, then a vigorous heading-in is given, practically renewing the whole top of the tree, and thereby doubling its longevity. Trees left to form their tops in this natural way require the maximum planting distance given, 20 to 22 feet apart each way. Pruning and heading-in is best done in late winter or early spring.

Thinning.—This is an important and profitable part of Peach culture, whether extra handsome and delicious fruits are desired for one's own table or for doubling market prices. It also conserves the energy of the tree, so that it can bear more regularly, and helps to keep insects and diseases in check. The work should be done as soon as all the unsound and injured fruits have fallen naturally, before the Peach pits begin to harden, and when the fruit is about the size of cherries. In thinning, only sound and perfect fruits about five or six inches apart should be left. Thinning is really not expensive, since the fruit must be picked at some time every year, and it is only the large and handsome fruit that pays in a plentiful year.

Peach Enemies.—Most of these can be held in check by timely and thorough work. Often thorough culture, pruning and thinning will be all the work needed. The two most serious pests are the borer and curculio. The borer is the larva of a wasp-like

moth that lays its eggs in the bark near the root of the tree in summer. Wherever a hole is discovered, with gum exuding, the grub is at work. The most practical and effective way is to make a round of the trees twice a year, in fall and spring, and kill the borers, grubbing them out with a knife or some sharp instrument. If done frequently and thoroughly, the work is not really so laborious as pruning. Sometimes ashes banked around the trees in summer are helpful in baffling the borers, or hot water poured around the bared crown of large trees may kill the grubs. This latter method is not safe for small trees, and no method is so effective as the "grubbing." The curculio, the larva of which is the worm found in the fruit, must be treated as recommended in plum culture, if the insects are numerous. Indeed, it is well to begin early, so that they may not become numerous. Leaf-curl, in most sections, is easily prevented by thorough spraying with Bordeaux mixture. Fruit-rot and twig-blight are also generally held in check by sprayings with Bordeaux, supplemented with sprayings of copper sulphate, before the buds begin to swell, and as soon as the fruit reaches full size. All small and mummified fruits should be burned. Thinning is largely a preventive of fruit-rot. For Peach yellows, "little Peach" and Peach rosette, the only remedy is to dig up the trees and burn them.

Tilling and Fertilizing.—The Peach responds more quickly to tilling and fertilizing than almost any other fruit tree. The first year or two after planting, low-growing hoed crops can be grown between the trees; afterward they should have the ground all to themselves. To start growth early in the spring, a light dressing of nitrate of soda is sometimes used around trees that seem to lack vigor. Barnyard fertilizers are also good, because they add humus, as well as fertility, to the soil. A thorough spring plowing, with shallow cultivation until midsummer, and then a cover crop sown for plowing-in the next spring, is the practice common among successful Peach growers. Top-dressings and fertilizers, according to the needs of the land, are applied when the cover-crop is plowed in. They should be heavy enough to supply food for a fine Peach crop, but not heavy enough to excite late growth of wood that has not time to mature before winter. Potash and phosphoric acid may be used liberally, nitrogen sparingly. Peach trees which overgrow are likely to suffer in winter and defeat the object of their cultivation.

Marketing.—The Peach crop should be handled quickly and carefully, the market being decided upon before the fruit is ripe. The grading and packing should be neat and careful. Small, attractive packages of handsome fruit are more profitable than large ones. "Even in years of low prices," says an experienced fruit-grower, "honestly and tastefully packed fruits bring good prices. The handsome boxes of California Peaches, containing 60 wrapped fruits, will readily sell for \$2 to \$4, while home-grown Peaches sell for 25 to 75 cents a half-bushel; and yet the latter may be the best by the time it reaches the consumer. The ordinary grade of Peaches sells for from 50 cents to \$1 a bushel. Well-grown and well-graded Peaches ought to sell, at the same time, for \$2 to \$3 per bushel. Our fruit packages are too large. The Peach is a dessert fruit and should command a fancy price. It should be sold in dainty baskets, and these should be sold with the fruit. The bushel package is for apples, potatoes and turnips."

Yields and Profits.—Thrifty young Peach trees frequently bear a few fruits the next year after planting, a number of fine ones in their second and third years, a full crop the fourth year. A well-managed orchard should yield a profitable crop every other year, allowing half the years for unpredictable losses by late spring frosts, etc. But the orchard may not be neglected during "off" years; it needs the same attention in cultivation as during fruitful ones. If the trees are young, hoed crops can be grown between the trees. Some Michigan Peach orchards are profitable for twenty years. One grower of that belt says that he has never had a complete failure of crop, and secures good crops three years out of five. The yield is sometimes 250 bushels to the acre, sometimes more. He averages \$100 an acre, year by year, and \$1 a bushel for the fruit as it runs in the orchard, buyers taking it there. Other orchards in the same region report phenomenally large returns even in years of plenty, but a safe estimate of the average net profit on Peaches is from \$100 to \$200 per acre. The Peach is not so long-lived in all sections. "From eight to ten good crops of Peaches," says a New York grower, "are all that can be reasonably expected from an orchard, although there are some plantations that produce more than that before they are finally worn out. Individual trees will begin to fail after five or six years, and, except in the home fruit plot, it is rarely profitable to set new ones in their places. If one is undertaking commercial Peach-growing as a permanent enterprise, he should have new orchards coming on to take the place of the old ones." This also gives opportunity for introducing new and better varieties.

NECTARINES

The Nectarine requires the same culture and management as the Peach. It is an exceedingly pretty and delicate-flavored fruit, with a Peach shape and a smooth Plum skin, loved of curculios, which are suppressed as in Plum culture. It is a good fruit for wall training, in espaliers, and is also grown in cold graperies with great success. In California, the Nectarine is largely grown for drying and canning, the white varieties predominating. In our city markets the fresh fruits are usually sold in small baskets at high prices.

APRICOTS

The Apricot ripens at a time calculated to make it especially popular and tempting,—between Cherries and Peaches. Its large, snowy white flowers open precariously early, and for this reason it is usually planted in locations that favor late flowering. It succeeds admirably when trained in espalier form, a good point for small gardens, as it may occupy a house wall, fence or trellis, leaving the open ground space for other trees. Here, too, in cold sections, its blooming branches can easily be protected from late spring frosts by mats or boards. Give the same culture as the Peach, and protect from curculio like the Plum. Market in small, attractive baskets and you will receive good prices. The culture of Apricots for canning and drying is one of the great California industries. Beautiful new varieties, later-blooming than the older ones, are also extending its culture in other states. Sometimes the fruits escape late spring frosts that kill the Peaches, because they have outgrown the critical stage, while the tiny Peaches, from later flowers, are entirely unprotected, and at their tenderest age.

THE PEAR

Next to the Apple the Pear is our longest-keeping fruit, and next to the Peach the most luscious among the hardy ones; yet in most homes outside of well-known Pear growing regions, the Pear supply is limited to a few baskets of the fruit in late summer and fall. A good and plentiful supply of home-grown winter Pears is still counted a luxury. These facts undoubtedly add to the commercial Pear-grower's profits, but, now that diseases of the Pear are better understood and more easily controlled, the trees should be planted in much greater numbers, and in sections where it has hitherto been thought impossible to grow them successfully.

Standard Pears. The Pear may be grown successfully on a variety of soils, but is longest-lived and most productive on rather hard clay. Soils and situations that would influence toward quick, rank growth and early spring bloom are to be avoided. It is now a generally recognized fact that trees which are making a luxuriant, sappy growth are more susceptible to blight than those which grow rather slowly, making firm, strong twigs and branches. Moderate tilling and fertilizing and pruning are advisable for the same reasons. Concentrated fertilizers are used in preference to stable manure, because they have less nitrogen; unless the Pear trees seem to lack vigor, in which case nitrogenous manures should be sparingly applied.

With the exception of closer planting,—15 to 20 feet apart, according to forms and varieties,—the Pear is cultivated much like the Apple. It is pruned less, because extra-luxuriant growth is undesirable. Prune for a moderately free and open top, with an even and plentiful distribution of fruit-spurs. The Pear bears on spurs that continue to branch and bear for a number of years, so that pruning them away means thinning the fruit also. Little pruning will be needed after fine tops are formed, beyond the removal of weak inner and straggling outer branches. One of the more successful Pear-growers gives as an important rule: "Prune every year, and do not prune heavily any year. Keep the trees in good condition continually rather than force them into condition now and then."

Dwarf Pears.—Dwarf Pear trees, formed by grafting the Pear on the Quince, are sometimes preferred for planting in restricted areas, or where it is desirable to set a greater number of trees to the acre than the ordinary standard form will allow. They are favorite trees for small city yards and fruit gardens. Although they require somewhat more care than the standard Pear, they bear much earlier, the fruit is larger, better, more easily gathered, and more trees can be planted on a given area. The common impression that all Dwarf Pear trees are short-lived is erroneous, except, perhaps, in regard to the untilled and unpruned trees of dooryards and gardens. In several different sections of the country there are Dwarf Pear orchards still hale and productive, fifty or more years after planting.

The best soil for Dwarf Pears is a rich loamy one, thoroughly well drained. It must be kept fertile, with yearly top-dressings of barnyard fertilizers and such com-

mercial ones as bone and potash. Dooryard and garden trees should have the sod dug away from their trunks for several feet all around, and the soil kept loose and rich with fertilizers and frequent stirrings or mulchings. Orchard cultivation should cease in August, to allow the wood to ripen. The trees may stand 15 feet apart each way, or 20 feet apart each way, with a tree in the center of each square. Some care is necessary in planting to set the trees so that the top of the Quince stock shall be covered several inches deep with soil. Since a Dwarf Pear should never reach a greater height than 12 to 14 feet, to dwarf it properly it is necessary to cut away from one-half to two-thirds of the annual growth late each winter, beginning with the first year. The first branches should start about two feet from the ground, and with age they spread until the trees are about as broad as tall. Very odd and quaint little trees they make, but the fruits are large and delicious. All varieties of Pears do not make good dwarf trees. Duchesse d'Angouleme is the leading dwarf variety. Others popular as dwarfs are Clairgeau, Anjou, Manning's Elizabeth and Louise Bonne de Jersey.

Thinning the Fruit, when the crop is heavy, is of great importance. Unless well thinned, when about one-third grown, on both dwarf and standard Pear trees, the fruit will be poor and the trees injured.

Pollination.—It has been found that some varieties of Pears need the pollen from other sorts in order to set full crops of fruit. An experienced Pear-grower says of this matter: "Probably any variety will fertilize any other variety in case the two bloom at the same time. Such varieties as Kieffer and Bartlett are usually classed as self-sterile, but the degree of sterility varies in different places and with different conditions. The safest plan in the setting of a Pear orchard is to plant not more than two rows of one variety together, and to alternate with one or two rows of another variety." Large and unproductive orchards, all planted to one variety, have, in several cases been made to yield quite well by top-grafting or replanting one-tenth of the trees throughout the orchard with other varieties.

Insects and Diseases.—The insects common to the Apple and Peach sometimes also molest the Pear and are destroyed as prescribed for these. The spraying with Bordeaux, recommended for codling moth, is also effective in checking the fungous diseases attacking both foliage and fruit of the Pear, causing the leaves to drop and the fruit to become scabby and cracked. Fire blight is more troublesome than other Pear diseases. Some cultural precautions against it have already been given. Shoots attacked by it begin to die from the tips downward, holding their dead blackened leaves as a danger signal. The only remedy is promptly to cut away all diseased growth, taking with it for safety several inches of apparently sound wood below, and as promptly burning it.

Varieties.—Bartlett, one of the oldest varieties, is still one of the most important. It furnishes four-fifths of the great California crop, and is largely planted elsewhere. Kieffer, one of the most popular canning Pears, is a money-maker in Delaware and southern states where blight and scale are troublesome. The small Seckel Pear, with russet cheek and melting, delicious flesh, is still the standard for quality. In the Gulf states, Kieffer, Le Conte, Garber and Smith prevail. Clairgeau, Anjou, Howell, Sheldon, and the varieties recommended under dwarf Pears, are also planted in quantity. Easter Beurre, Josephine de Malines, Lawrence and Winter Nelis are among the best winter Pears. Manning's Elizabeth is the earliest summer Pear.

HANDLING THE CROP

Gathering.—A most important point in the management of Pears is to gather them at the right time. Summer Pears should be gathered at least ten days before they are ripe; autumn Pears several days earlier. Winter Pears, if they will hang so long, may be left on the tree until the leaves begin to fall. Oddly enough, all Pears are of higher color and better quality when ripened in the house. When fully grown, not yet soft, and just beginning to color, pick and place them in a dry, cool room. Cover just enough to exclude light and keep them from shriveling. Winter Pears can be kept until spring, as apples are, in a fruit-room or cellar of evenly cool temperature.

Marketing.—In southern orchards, Kieffer Pears are packed while still hard, just as apples are. Fine grades of fruit are shipped in "southern carriers," holding half a dozen baskets, and beloved for their convenience in handling by the retailer. California Pears are wrapped singly and shipped in flat boxes, as described under Peaches. Export Pears are wrapped singly and packed, 3 to 5 dozen fruits in a box, with layers of paper and excelsior between the layers of fruit. Careful handling and small, dainty packages pay even better with Pears than with other fruits.

Yields and Profits.—Large yields and profits are reported from the California Pear industry, and also from growing Bartlett and Seckel Pears as dessert fruits in a small way, but the Kieffer Pear, which, like the Elberta Peach and Ben Davis Apple, has received uncomplimentary notices as to quality, in East and South, remains, like them, among the most important commercial fruits. It has even stood the crucial test of exporting satisfactorily. In our great city markets it retails usually at 35 to 50 cents for a five-eighths-bushel basket, but even when sold at 25 to 30 cents a half-bushel basket it is still immensely profitable, so great is the yield. Growers give this as ordinarily 1,000 baskets per acre, often more. Prices on Pears of finer quality are even more valuable. Fine winter Pears retail in New York and other cities at from 50 to 60 cents a dozen in midwinter. Exported Pears are reported by those engaging in the trade as bringing 40 per cent higher prices than they command at home.

THE PLUM

The market for high-grade Plums is practically unlimited. Yearly the nurseryman must grow larger blocks of the trees. The demand for trees of the Japanese Plum (*Prunus triflora*) is from the whole country, north and south, this handsome, fruitful, sturdy type seeming to be generally adapted to all the states. The European or Domestica Plums (*Prunus domestica*) are favorites from Lake Michigan eastward and southward, as well as in the great California orchards. Even in sections of the country most unfavorable to the Plum the native American types succeed. Some of the newer hybrids of these are so fine and delicious that they are attracting attention everywhere.

Diseases of the Plum no longer appear formidable to the energetic fruit-grower. With only reasonably good care and culture the trees can be kept in a healthful condition, and will produce fine crops of fruit. Two or three thorough annual sprayings with Bordeaux mixture keep away leaf-blight and fungous diseases, besides helping to prevent black-knot. The mixture should be weaker for spraying Plums than for Apples, particularly for Japanese Plums. Should black-knot appear, clean and prompt cutting away and burning of all diseased wood, together with clean cultivation, hold it well in check. The thinning of too heavy crops of fruit prevents fruit-rot. Bordeaux sprayings are good for this also.

The Curculio is destroyed by jarring the trees in the early morning when the insects are dormant. Sheets are spread under the trees to catch the falling insects and stung fruits, all of which are destroyed. Under trees of the home fruit garden chickens are very lively and cheerful agents in their destruction. In large orchards a curculio-catcher is employed, and the trees are headed high enough to give room for using it conveniently. The work must be done daily, if the insects are numerous, for two weeks or more after the fruit falls from the trees. This sounds arduous, but does not take much time, and well repays the trouble, as the "little Turk" is one of the chief enemies to Plum culture. The mallet or club used in jarring the trees must be wrapped with a soft substance to prevent injuring the bark.

Thinning.—As soon as the curculios cease to molest, the fruit may be thinned, as for Peaches, and all imperfect and stung fruits removed with the overplus. After thinning, the fruits should stand an inch or more apart. Even up to the time the fruits begin to ripen, thinning may be continued with profit, if the earlier work was not thorough.

Cultivation.—Japanese Plums seem to thrive well on all good soils. The European sorts are most thrifty and productive when planted on a clay loam, or on the heavier soils found adapted to Pears and Apples. In a Plum orchard the trees should stand 15 to 20 feet apart each way, according to soils, varieties and manner of pruning. Some orchardists prefer to plant the trees 8 to 12 feet apart in rows 18 to 20 feet apart, cultivating only one way, as the trees reach bearing size. For the home supply of fruit they may be planted somewhat closer, but not too close to prevent development and some sort of tillage, or the black-knot will appear. Mulches are easily given where there are only a few trees, and will help them to ripen their fruit through hot, dry seasons. Remove them or dig them in to fertilize the soil before curculio time comes round again.

Pruning.—Plum trees are pruned back before planting, as advised in the preliminary chapter. The heads are started low, about 3 or 4 feet above the ground, as is the custom with most trees in modern fruit culture. Four or five main branches form the framework of the top, and low-growing varieties are allowed to retain the central leading shoot. In pruning, be careful of the fruit-spurs, unless it is desired to thin

the fruit. The European Plums bear most of their fruit on these spurs ; the Japanese and American Plums bear on the annual growth also.

Pollination.—Never plant an orchard of one variety alone. The Plum does not set fruit freely with its own pollen. It is well to plant alternate rows of different varieties, that complete cross-pollination may be secured. The unproductiveness of Plum orchards in many sections of the country has been traced to imperfect pollination.

Yield, Etc.—Plum trees usually bear some fruit the third year. In the fourth year a fairly profitable crop may be expected. Fifty to sixty pounds of fruit per tree is a good yield for a five-year-old tree. It ought to be doubled the next. From 150 to 300 pounds is the average yield afterward. Averages are larger in California, of course. Some sections report yields of 600 to 800 pounds on six-year old trees.

Picking and Marketing.—Plum orchards will yield a good return for money invested if marketing is properly understood. Native Plums should be picked when well colored, but still firm. Both native and foreign varieties ripen well if picked any time after their characteristic color has developed. The period of ripening continues several days, so that it is rarely possible to gather all the crop at one time. Baskets of any convenient size are used for picking. The grading is done later. It is usual to make three grades : choice or large fruits ; common, a very even grade ; and a "jelly," or soft Plum grade. It should hardly be necessary to say that fallen or shaken fruits are not marketable. The finest grade of fruit is always marketed in small packages. Different growers use various sizes, from the small strawberry basket to bushel baskets, according to grade. The one-fifth-bushel basket seems to be in high favor among them, as convenient, cheap and profitable. It is necessary to use a raised slat cover for it in shipping. Prices for Plums vary greatly with season and locality. Even the small, cheap Plums used for canning and preserving, as Wild Goose and Damson, sell for from 10 to 15 cents a gallon, and a medium-sized tree will yield from eighteen to twenty gallons.

THE CHERRY

The Cherry is one of the most delicious and refreshing of our early summer fruits. It can be trained in any form that taste or circumstances may require, and, in some form, either the sweet or sour varieties may be grown in almost any section.

Sweet Cherries make a tall, erect growth, with large, soft, drooping leaves. Their fruits are heart-shaped, or somewhat pointed, with sweet and tender flesh. The softer-fleshed ones are called Hearts ; the firm-fleshed ones are Bigarreaus. Sweet Cherries all grow rapidly, sometimes making a growth of six feet from the bud in one season. In two years they form fine standard trees, six or seven feet high, with a few top shoots. With age, in favored localities, they form grand, spreading trees that yield enormous and profitable crops. They like a naturally light, dry, loamy soil. A soil not naturally dry enough may be made so by underdraining, and on light, dry knolls the moisture capacity may be increased by green manures and surface tillage. The trees begin to bear four or five years after planting, and at ten years a productive sort like Windsor ought to carry from seventy to one hundred pounds of fruit in season. At thirty years a tree should produce 300 to 400 pounds of fruit. In California orchards, trained with very broad, low heads, trees frequently yield 1,000 pounds per tree, some even doubling this amount.

Sour Cherries are naturally low-headed and spreading in growth, with rounded, stiff, glossy leaves. They make smaller, slower-growing trees and are even harder than the Sweet Cherries. Their fruit is generally round, varying in color from light red to dark maroon. Those with light-colored, pleasantly sweet flesh are called Dukes ; the light-colored Sour Cherries, with colorless juice, are Amarelles ; the dark-colored, dark-juiced sorts are Morellos. All sorts of Sour Cherries are delectable for cooking. The trees thrive and bear well on any strong soil that is well drained, but are most profitable on a deep, rich clay loam. They begin to bear at from three to five years after planting. A productive sort will produce from forty to fifty pounds of fruit per tree at ten years old. Cherries are among the most profitable and easily cultivated of our tree fruits.

Planting and Pruning.—In fruit gardens and dooryards Sweet Cherries may be planted eight to ten feet apart ; Sour Cherries six to eight feet apart. In orchard culture and in favorable locations Sweet Cherries need 25 to 30 feet of space ; Sour Cherries need 16 to 18 feet. In orchards where Cherry trees are not subject to bursting of the bark, tall-stemmed standards are in favor, but for fruit-gardens, dooryards, and, indeed, for all purposes, the short-stemmed tree is gaining favor. Grown as a

standard, the Cherry requires very little pruning. Summer pruning and pinching-in of the shoots is best. When large branches are cut away, the gum exudes injuriously. All cut surfaces heal more quickly during the growing season. Sweet Cherries are started with from three to five main arms, and are pruned to side buds for a few years, to induce a spreading rather than a spire-like form. Sour Cherries are pruned merely for symmetrical, open heads, with superfluous shoots and dead or intersecting branches cut away. For garden culture, it is better to set the trees along the border where the ground will not be under constant tillage, and where it may be seeded down after the trees begin to bear. If the trees do not make good growth, the soil can be enriched with annual top-dressings. The sod should be cut away from around dooryard trees and the soil stirred and kept clean during the growing season until the trees begin fruiting. Mulches about the roots in winter also help to establish young trees.

The Cherry Crop.—Sometimes the fruit on a single grand old Sweet Cherry tree is worth more than several acres of wheat. There is a tree in northern Delaware, seventy to eighty years old, that has produced an average of \$50 in fruit annually for nearly twenty years. One year the Cherries sold for \$80. Another year the tree bore fifty-four peach baskets full of delicious fruit,—“a free gift from nature, as it stands in a dooryard, uncared for, except in Cherry time.”

Marketing.—Cherries should be picked and packed carefully by the stems into small baskets, or neatly in flat boxes, with sheets of paper between the layers. The choicer the fruit, the more temptingly it should be displayed. It would pay Cherry growers to adopt smaller, more attractive packages and get pound prices. Small, stemless and imperfect fruits should be sorted out, and the Cherries faced, somewhat as in larger fruits. In picking Sweet Cherries guard against breaking the fruit-spurs. Cherries for canning do not need so much care in packing, but should be as carefully picked. The range of profit for a Sour Cherry is variously given at from \$30 to \$100 an acre; \$50 to \$300 as the range for Sweet Cherries.

THE QUINCE

When well treated, the Quince is really, in blossom and in fruit, one of the most beautiful of all our fruit trees. Its modest size and ornamental character have made it largely a dooryard tree, and it has suffered much from neglect. Under good culture, and often without it, Quince trees bear with remarkable regularity. There are several notable Quince orchards in the United States. They are managed like Pear orchards and are quite profitable. The flavor of the fruit is richer and milder in warm countries than in cold ones.

The best soil for the Quince is a deep, rich, moist clay loam, with good drainage. On lighter soils the trees grow more rapidly, but are not so long-lived and fruitful. They begin to bear two or three years after planting, yielding full crops when from ten to twelve years old. A small tree is often laden with a peck or more of great yellow fruits; a large one frequently carries one or more barrels of them.

In garden culture, pyramidal or small bushes are planted 6 to 8 feet apart. In orchard culture, on light soil, 10 feet apart each way is the rule; on heavy soil, 15 feet apart. As the Quince is a shallow-rooting tree, shallow culture is in order for it, but it should be as thorough as for the peach and plum, and adequate fertilizing is well repaid in large, rich-colored fruit. The trees' vigor and productiveness may be accepted as guides to fertilizing. If they lack vigor, apply barnyard manures broadcast in fall or early spring, and supplement with potash or phosphoric acid. When readily soluble fertilizers are used, apply in smaller quantities during the growing season. When the trees come into bearing, the orchard may be seeded to grass, or cover-crops may be used. The grass is kept short and the clippings allowed to decay as mulching. Insects and diseases can be held in check by spraying soon after the petals fall with Bordeaux and Paris green. If there is much rain, repeat the spraying in ten days.

Naturally the Quince grows in vase-shape, and may be kept so with a little sensible and simple pruning, becoming globular with age. Its diseased and superfluous branches should be removed in winter or early spring. When old and ragged, with little bearing wood, heading-in is in order. Crops of small or ill-shaped fruits are due to overbearing or insect enemies. When crops are heavy, thinning pays well, both in preserving the vigor of the trees and in the higher price received for large, handsome fruits.

As their beautiful, clear yellow skins show bruises readily, Quinces need careful handling during gathering, grading and packing. The fruit is usually shipped, according to quality, in peck or in 15-pound grape baskets; in bushels, half-barrels or barrels. The finer grades are generally marketed with greatest profit in the smaller packages. Careful uniform grading always pays. The barrels are packed tightly, as

in apples. The price of Quinces varies greatly, though the fruit is always in great demand for jellies, marmalades, and for flavoring other fruits. Ordinarily the fruits sell at \$1.50 to \$2 per bushel, retailing at 25 cts. to 50 cts. per dozen. The crop is usually reliable, because the trees bloom so late that it is not apt to be destroyed by capricious weather variations.

BUSH FRUITS

From mere garden accessories, lightly treated, though adding greatly to summer delights, the small fruits have become commercial crops, and are the main reliance of many fruit-growers. There are plenty of men whose main or money crop comes from these little bushes. The surplus berries of the garden can be made to contribute many other comforts to the country or suburban home. The berry fruits all yield quickly to good care. They are shallow-rooted plants, depending to a great extent on the good tilth and richness which the owner applies to the surface of his land. As their fruits are borne in hot midsummer, their flavor and rich juiciness depend very largely on the supply of moisture in the soil. This moisture is stored and saved by good tillage. To keep the cultivator going is one of the greatest aids to success in berry-growing, particularly with raspberries, dewberries and blackberries.

Intelligent Pruning is another important point in the culture of Bush Fruits. On the newer wood the fruit is borne. The old wood should be pruned away as soon as it ceases bearing plentifully. That the bushes may not be cumbered with useless growth, the number of shoots springing from the crown every year must also be limited. At planting time the canes should be cut back to one or two buds each, and but one or two strong new canes allowed to grow the first season. If any blossoms or fruits appear the first season, it is better to remove them.

Cultivation should be shallow and frequent, the ground having been thoroughly prepared and enriched beforehand. It may be kept rich by repeated annual dressings. The roots are near the surface, where they eagerly take up any plant-food furnished.

Berries for Market should never be picked when wet. Picked in the early morning, as soon as dry, they keep fresh longer than when picked at any other time.

THE CURRANT

Currants and gooseberries endure cold much better than heat. Native American sorts range far north into British America, and their hybrids with English sorts are also very hardy. In cool climates they are not more difficult to grow than other fruits. The small supply needed for the home garden can be grown in almost any soil. They love best, however, a cool, moist, rich, clayey loam and a northern exposure, or partial shade. The further south they are grown the more important it becomes to provide these conditions. They are sometimes grown in the shade of orchards, and the home supply may be grown on the north side of walls or buildings.

The Currant starts into growth very early and should be planted before growth starts, if the ground can be properly prepared. Where fall planting is safe this is advisable. In field culture the bushes are set 4 by 6 feet apart, in well-prepared, deep, fine mellow soil, and given clean, shallow tillage, as the roots spread near the surface. In garden culture thick mulches are sometimes made to take the place of constant tillage, for no fruit will be forthcoming in a grass plot, or where the soil is not kept moist and cool.

Pruning is important, but not at all difficult. The shoots begin to bear in their second year, continuing for several years. The first two crops on any cane are usually the best, however, and it is advisable to cut out part of the old, weak wood each year, allowing two or three new shoots from the crown to take its place. Thus a constant renewal of the whole bush is continually taking place. Such pruning results in low, dense bushes, much more fruitful than the tall, sprawling ones so frequently seen about old yards and gardens.

Fertilizing.—Rows and fields of Currants may be kept profitably bearing to a good old age if properly fertilized and pruned. Liberal mulches of stable manure applied in fall are well repaid by vigorous bushes and more bountiful crops. Fertilizers containing potash, given in addition to these, will improve the quality of the fruit. Wood ashes make an excellent fertilizer for Currants and Gooseberries.

Currant Pests.—The Currant worm is the most troublesome of these. It begins feeding on the lower leaves of the shoots and strips them bare to the tips unless checked by spraying with arsenites. Paris green is used until the fruit sets, powdered white hellebore,—a teaspoonful to a gallon of water,—afterward. If sprayings begin

before the insects appear they are never so troublesome; it is then a preventive instead of a remedy. The arsenite may be mixed with Bordeaux for the first sprayings if fungous troubles are apprehended. Currant borers can be routed only by cutting out and burning the canes infested by them. The leaves on such canes turn yellow and the bark shrivels as the borer works its way upward.

Varieties.—Red Currants are most profitable in nearly all sections. Cherry, Fay, Red Dutch, Versailles, Victoria and Wilder are ardently advocated by growers in different sections. Fay, although condemned in some sections, is the most profitable sort of all in others. For canning and jelly, Prince Albert, a very productive late sort, is much used. Some of the white varieties are much sweeter than the red and make delicious dessert fruits. White Grape and White Imperial are good sorts. Black Currants make larger plants than red ones and require more room. They have important medicinal virtues and are largely used for cordials, etc. The Currant worm does not molest them.

Marketing.—Currants are usually marketed, like other berries, in quart baskets, shipped in crates. The nine-pound grape basket has also been found convenient for this purpose. When shipped to a distance they are picked while still firm, and always when dry, taking care to keep the berries on their stems and uncrushed. For near-by markets the berries are allowed to ripen longer. If protected with netting they will remain on the bushes until fall. For dessert use they are much more delightful and refreshing picked fresh from the bushes and fully ripe. They are good berries for cold storage and "stand up" quite a while after removal.

Currants are a profitable crop when well grown. The yields vary greatly. From two to four pounds per bush is the average for garden culture; 100 to 150 bushels per acre the average in field culture. Prices paid for the fruit vary quite as much as the yields. After eight or ten good crops the old bushes are usually replaced with new ones, as the cost of replanting is light, and vigorous young bushes in fresh soil yield larger crops of finer fruit. They begin to bear the second year after planting. Currants and Gooseberries have evidently a growing market. Unless grown in much larger quantities than now, with production cheapened by improved methods, profits and prices seem likely to increase together; but even should the latter fall there will still be profit in the culture of these fruits.

THE GOOSEBERRY

The culture of Gooseberries is similar to that of Currants, already outlined. The four points to be emphasized are: (1) a very rich soil and a somewhat moist one, if selection can be made; (2) shade from midday sun in hot weather; (3) thorough sprayings with Bordeaux and Paris green for the currant worm; (4) thorough tilling, for the Gooseberry will utterly fail in a grass plot.

The Gooseberry starts into growth early, and must be planted either in fall or very early in spring. Distances for planting vary with methods of culture, from 6 x 3, 5 x 3, and, for garden culture, 4 x 4 feet apart. English varieties require more space than American. This is a good bush for rather densely shaded city gardens, and is also frequently grown under orchard trees and along the north side of walls and buildings. Where the shade is dense, prune the bushes for free, open heads, or mildew may attack them. American sorts need much closer pruning than English. The bush form, with several stems, is preferable to the single-stem method, as bushes last longer and are more fruitful than trees. They bear most freely on two- and three-year-old wood. As the shoots lose vigor, prune them away and keep up a continuous supply of new ones. Plentiful annual manuring is necessary to plenty of rich fruit.

Mildew and Leaf-spot are the worst enemies of the Gooseberry. To prevent them, spray with Bordeaux mixture as soon as the leaves begin to unfold in spring. If more than two sprayings are necessary, use dilute copper sulphate, 1 ounce to 15 gallons of water, for the later ones, as Bordeaux stains the fruit. To keep away insects that molest fruit and bushes, treat as advised for Currants.

Valuable Hints on Yields and Marketing, as well as on culture, are given in the following report of a New York berry-grower: "The demand for this fruit is chiefly from English, Irish and German families. The supply is always moderate. The wonder is that so few of those who enjoy Gooseberries produce their own supply. One or two well-kept bushes would furnish a family with abundance for all uses, and the berry can be grown almost anywhere in the garden, regardless of conditions. Rich soil it must have, and the richer the better, but it need not have full possession of the ground, and is benefited by a shade-casting neighbor, such as the Quince or Grape, standing close on the South side. Partial shading may be considered about as essen-

tial as rich soil. For constant productiveness the Gooseberry has scarcely a peer. Since 1886 we have never failed to secure a crop from our bushes, the first ones having been planted in 1884. I know of no Currant that will yield more quarts to the square yard of ground. We have frequently picked sixteen quarts from a bush not a yard in diameter. The picking can be done in half the time required for picking the same quantity of Cherry Currants. We are always willing to accept the price paid for Currants, but it is easy to get one-third more for a fine grade of Gooseberries."

The picking of Gooseberries can be greatly mitigated by gloves. The grower just quoted evidently gave its discomforts no thought. It usually costs from 1 to 2 cents per quart. The American varieties are thorniest. Their berries are also the spiciest and preferable for cooking. Naturally the bushes require less care in our climate than those of the larger, milder-fruited English varieties. In its own country the English Gooseberry is often used uncooked, as a dessert fruit. The fruit of American sorts is usually picked green and sold or shipped in 10- to 20-pound baskets. Although the ripe fruit of the large English varieties sometimes brings the highest price of the season, with the green fruits there is less loss from injury in picking, packing and shipping, the demand is larger, and the bushes are not so much exhausted by the crop.

THE BLACKBERRY

The vigor and productiveness of the Blackberry are proverbial. Because of these very traits it is often neglected. The row of bushes in the home fruit-lot is left unpruned until it becomes too aggressive, and unfertilized until it ceases to yield a creditable amount of fair fruit. The market grower, too, thinks that the poorest soil he has may do for Blackberries, whereas, given fertility, this bush fruit will overcome almost all the other adverse conditions. The fertilizers should be well balanced, however,—not all stable manure, all potash, or all phosphates, but some of each, apportioned as study of the soil may reveal its needs. To liberal annual top-dressings the Blackberry responds with heavy annual crops of large, luscious black fruits. A heavy crop and then a shy one indicates that its owner tried to feed it enough one year to last for several years.

Planting and Training.—In early spring, or in fall, the bushes are set 3 feet apart in rows 6 feet apart. For garden culture the distance between the rows may be 3 feet, with 2 feet between the plants. Sometimes, where high culture is given, the plants are set in hills 7 to 8 feet apart each way. The most practicable method for garden training of the shoots is to set stout posts at intervals along the rows and to stretch a single wire from post to post about 4 feet from the ground. The fruiting canes are tied in bunches, or in fan-shape, to this wire, making cultivation and picking much easier.

Pruning.—In all the bramble fruits—Blackberries, Raspberries and Dewberries—the wood bears but once. Soon after planting a number of shoots spring up from the root. From three to six of the strongest of these may be left growing, the others should be pulled away. By fall the young shoots have made a fine growth, and the next year they will bend with a heavy weight of rich fruit-clusters. At some time before the next bearing season these shoots should be cut out entirely. If cut away soon after the fruit crop is gathered, more room is given to the new canes that bear next year's crop, but where heavy snows fall the old canes may be left until spring to protect and support the new ones. The summer pruning out and burning of old canes is helpful in keeping the rows clear of fungi and insects. At the height of from 2 to 4 feet the young canes should be clipped or pinched back to produce stocky, branching bushes capable of holding up heavy crops of fruit. Bushes of this shape are easily protected with straw or other materials in winter, or should late frosts threaten the flowers in spring. For pruning of the laterals, see Raspberries. In arid regions the crowns are allowed to develop but one straight, strong cane. This is not headed back in summer, but pruned down to 3 feet the next spring.

Cultivation.—The rich juices that make the Blackberry so delightful must be elaborated from moisture in the soil. The best of cultivation is, therefore, demanded in field culture, that no moisture may be lost. In small fruit-gardens mulching may be used instead. Some of the most progressive field growers both mulch and cultivate. One of them emphasizes strongly the importance of cultivation after the fruit is gathered. "Growers should realize that the future crop is entirely dependent upon this after-fruiting cultivation. The aim of the Blackberry and Raspberry grower should be to secure strong, healthy and well-ripened laterals before the approach of winter."

Insects and Diseases—An alert, energetic grower will not find these troublesome, if the canes are sprayed with Bordeaux mixture before the buds open, and again

when the leaves are well unfolded. For the second spraying arsenites are added to the mixture. Bushes infected with orange rust must be dug up and burned. Besides preventing borers, the cutting away of the bearing canes as soon as their crop is picked will help to prevent the spread of anthracnose and leaf rust.

Handling the Crop.—The Blackberry crop is profitable when well managed, on account of the large yields. The fruit should be left on the bushes as long as possible before picking; it is not ripe when it first colors black. After picking, it should never be exposed to the sun. The home supply and surplus is easily cared for. A great many berries are consumed in every town, and there are canneries and evaporators in most good fruit regions. The berries are usually sold in quart baskets, and these are shipped in large crates. In rural districts they are sold by the gallon. Prices vary greatly, with crop, quality of fruit and section.

THE DEWBERRY

This is a trailing form of the Blackberry, with large, luscious fruits most grateful because they ripen so early, several weeks before Blackberries. Their culture is similar to that of Blackberries. The young canes are allowed to trail along the ground in rows through the first summer and winter. In spring they are shortened back and tied to stakes or wires until after the fruit is gathered. Then the old canes are cut away and the new crop of young ones, thinned to 3 or 4 of the best, allowed to grow as in the beginning. An eastern slope seems to suit the Dewberry best, and it will grow better on light and sandy soils than the Blackberry. The berries are marketed like Blackberries, sometimes in smaller packages, and usually bring higher prices.

THE RASPBERRY

This is the most beautiful and popular of the bramble fruits. It flourishes in all good garden soils, but, where a selection can be made, will be found to produce largest crops and finest berries on deep, moist ones, not over-wet, but capable of withstanding drought. On the home fruit plot it is easy to mitigate unfavorable conditions, or varieties that can best withstand them may be chosen. The lighter loams are congenial to Red Raspberries; the heavier ones to Blackcaps. Too wet soils may be drained or subsoiled; too dry ones can be improved by applications of stable manure, or the plowing in of green crops. A liberal top-dressing of composted stable manure and leaf-mold from the woods makes an ideal fertilizer for Raspberries. Near country and suburban homes the mold is easily obtained and is of great benefit to humus-lacking soils. The best location for the Raspberry plot for the home garden is one having a northern exposure, where the young canes will be somewhat sheltered from winter freezing and thawing and from fierce summer suns.

Planting and Cultivation.—The Red Raspberries may be planted in fall or spring, but spring planting should be the rule for Blackcaps. After the soil has been thoroughly enriched and prepared, the young canes or suckers are pruned back to a few buds each and, for commercial culture, preferably set 4 to 6 feet apart, in rows 6 or 7 feet apart, covering the crowns about 2 inches deep. The same thorough tillage as advised for Blackberries is needed. Without cross-cultivation in early spring and after fruiting, the Red Raspberries would soon form thick hedge-rows.

Soils and Fertilizers.—The kind of soil is of less importance than its quality. Fine Raspberries can be grown on clay, sand, loam, or even in muck, provided the necessary food is given to develop first-rate growth and fruit. Soils that are rich in humus and nitrogen will be injured rather than improved for Raspberry-growing by adding more of these. They need such fertilizers as ground bone and potash, or wood ashes. If they lack humus and nitrogen, these elements of fertility can be supplied as noted above, and a balance should be maintained, as noted under Blackberries. On the home fruit plot an annual fall mulch of stable manure is usually beneficial. Other fertilizers should be applied early in the season, just before cultivating. The spring mulches given to newly set plants in the South are not applied for fertilizing, but to protect them through their first long, hot, dry summer. They may be of cut grass, coarse manure, leaves, or almost any similar substance convenient. The Red Raspberries need it most.

Pruning Blackcaps.—These are pruned just as outlined under Blackberries. In order to produce branching, self-supporting bushes the young shoots are nipped off when two or three feet high. The next spring their lateral branches are shortened-in. If growth, culture and soil are all of the best, little pruning beyond the frosted tips will be needed; the canes will be able to bear a fine crop. If canes are weak, soil

poor, and little culture is given, heavy pruning is in order, for the fruit will need this thinning, or it will not be worth gathering. The canes that bore fruit the last season are also cut away at this time. Later, when the fresh young shoots start, from three to six of the best ones are allowed to grow for fruit-bearing next year; all others are kept down through the season.

Commercially, the Blackcap (*Rubus occidentalis*) is the most important of the sorts. It does not command so high a price as the Red Raspberry, but is more easily grown and marketed, and more productive. Its field culture for evaporating has become quite an industry, profitable under conditions that would not warrant growing it for sale in a fresh state. Some of the newer sorts are of surprising size, as well as deliciously rich and juicy. This species is propagated from the tips, which take root wherever they touch the ground.

Red Raspberries.—After the first year, summer pinching back is not advisable for Red Raspberries. The old canes should be removed as soon as fruiting is over. This species, *Rubus strigosus*, is propagated by suckers from the root removed in early summer. These suckers are so numerous that extra care in keeping them down is necessary. They are not so productive as the blackcaps, nor so adaptable to all soils, but the beauty and rich, high flavor of their fruit commands a high price. For southern conditions Cuthbert and Turner have proved to be most profitable and generally acceptable.

Yellow Raspberries.—Some of these are good growers that bear abundantly and through a long season, but they are not so well adapted to general American conditions as the Red and the Black Raspberries. Golden Queen, an American hybrid of *Rubus Idæus*, has large, thimble-shaped fruits of an attractive yellow, and of sweet, delightful flavor. It is one of the best sorts for the home garden, where it can be given a sheltered, cool, moist, rich spot, but is not adapted for commercial culture.

Insects and Diseases.—These are controlled as advised under Blackberries. Plants attacked with red rust should be rooted out and destroyed as soon as they are discovered.

Winter Protection.—Varieties known to be tender in a locality, or all varieties in coldest climates, may be protected in winter by bending them over and covering them with earth, leaves, litter, or branches of evergreens. The work is lessened by bending the canes in the direction of the rows, so that the tops will lap over the crowns. They should not be uncovered in spring until danger from cold winds is past, or until near time for the buds to begin to swell.

Raspberry plots and fields may be kept in bearing many years if properly cultivated, pruned and enriched, but young plants in fresh soil are more profitable after five or six years. Yields and profits vary greatly. A safe average on the Blackcaps is probably \$100 per acre. Where Red sorts yield well and are near to city markets, the average would be much higher. The Raspberry crop is rarely a total failure, like some other fruit crops, and is a favorite one for farm children. Few of the bushes yield less than from 25 cents to 75 cents in a season, and they can be scattered in rich, moist nooks here and there about the farm and garden, or even under orchard trees. Red Raspberries are marketed in pint baskets; Blackcaps in quarts or gallons.



Vine Fruits

The Grape, Strawberry and Dewberry are our most important vine fruits, the Grape leading. All differ so much in culture that details are given under separate heads. Dewberries, because their culture is similar, follow Blackberries on page 21. Young plants of all should have flowers removed the first summer. Strawberries are a most important crop on account of their early season; Grapes, because they close the season of small, clustered fruits, and may be kept so late.

THE GRAPE

The Grape has the same importance among small or clustered fruits that the Apple has among large ones. It has been a symbol of home enjoyment apparently even since the world began. One of the first impulses of the thrifty homemaker is to plant a grape-vine or two,—dozens of them if there is plenty of room. Grape-growing is a delightful hobby for many business men who have only small city lots on which to grow the vines, but whose success proves that intelligent culture can make almost any spot suitable for Grapes.

Soils and Locations.—So much emphasis has been placed upon special soils and locations for grape-vines, that many Grape lovers have relinquished the idea of planting even a home vineyard. This was in the olden time. Modern Grape growers characterize this as nonsense. A Chautauqua grower says: "One of the surprises in the development of the Chautauqua Grape zone is that some of the so-called poor land has given vineyards as productive as any. This land was poor in nitrogen, but no doubt had a fair supply of available potash and phosphoric acid, which Grapes most require. For domestic planting gravel would be preferable. The soils of which most serious warning should be given are those containing a very liberal supply of available nitrogen. All experienced fruit-growers know of the impossibility of early fruiting with trees or vines which are making a rampant growth. There is no fruit so easily intoxicated by nitrogen as the Grape. Long-jointed canes are always to be avoided. Besides being less fruitful, a riotous growth of vine is far more liable to mildew and other diseases than vines of sober growth. . . . It is a common thing for writers to lay much stress on 'southern slopes' and 'sunny slopes,' but the idea is merely a tradition taken from old European customs not yet wholly ignored, and is not from their own experience. Scarcely an acre of the 25,000 planted to vineyards in the Chautauqua belt but faces the north and is in full view of Lake Erie. . . . The best location for a commercial vineyard is along the shores of our lakes or large rivers. The advantage of such locations is due almost entirely to protection from late and early frosts." The advantage of an elevated or sloping site for a vineyard is in frost drainage. Cold air settles in the bottom of a valley. Late spring or early fall frosts often injure Grapes at the foot of a slope, while the rows of vines above are uninjured.

The Home Vineyard.—This, of course, must be near the home, and no soil or site selection is possible. If the soil is naturally good, deep and gravelly, so much the better; if not, a little more work is necessary before the vines can be planted. If it has a northern exposure and gets little sun, then the hardier, earlier-ripening American Grapes are the sorts to plant in it. Damp or soggy soils need thorough drainage before the Grape will flourish in them. This is simple if only a border or an arbor is to be planted. Trench out the location to a depth of 3 feet and place in the bottom a layer of small stones, or rubbish, a few inches or a foot thick, according to the moisture in the soil. The earth excavated can now be mixed with fertilizing materials and then thrown back into the trench. A raised bed or border, at least a foot higher than the surrounding surface, should be the result, so that, in settling, the border for the vines will still be slightly higher than the ground about it. Many homely materials can go into the composting of this border. To two parts of the loam there should be one of old, well-rotted manure,—less if the soil is naturally rich,—and another part may be made up of ashes, shells, broken bones, etc. Bone meal and wood ashes, in the proportion of two parts ashes to one of bone, make a good fertilizer for Grape-vines. Clean, shallow culture is always the best rule. Any simple method of pruning may be adopted, or the vines may be grown in arbor fashion on walls, porches and trellises, pruning back enough each year to properly thin the fruit and maintain vigorous growth.

Grapes for Profit.—In commercial culture vines are planted 8 feet apart in rows 9 feet apart, in fall or spring. Before planting the vines are cut back to 3 or 4 buds

each, and the roots are well shortened. Should all the buds start to grow, rub away all but the strongest. The long shoot thus formed may be either staked or allowed to lie along the rows the first season. Cut back the second year to the same number of buds as the first year, and again select the strongest shoot, which this year should have a stake to support it. The third year, if the vines have made good growth, the trellis will be set and a mode of pruning and training decided upon. Vigorous, healthful growth during these first two years is quite important, and so, therefore, is the preparatory plowing and fertilizing of the vineyard, as outlined in the chapter on Orchards and Fruit Plots. A study of the soil will be necessary to determine what fertilizers it needs. Red clay upland soils need less potash than others. Soils generally favorable to the Grape, but deficient in potash, may have their fertility maintained by annual applications of a fertilizer containing about 3 per cent nitrogen, 8 per cent phosphoric acid and 4 per cent of potash, used at the rate of 500 pounds per acre. Some vine-growers prefer to use 500 to 600 pounds per acre of bone and potash. Shallow, clean cultivation until late in August has always been found best. Some hoed crop may be grown between the rows the first season; after this the vines will need the vineyard all to themselves.

Pruning.—There are several good systems of pruning, each of which has renowned and ardent champions. The two simplest and most practicable ones are known as the Upright and the Kniffin systems. An outline of these, explained by the accompanying figures, is given by Professor L. H. Bailey, in his handy little "Pruning Book." I condense from it as follows: "Fruit is borne on wood of the present season, which arises from wood of the previous season. Only the strongest of the new shoots arising from buds on last year's wood will produce fruit. A vine should bear only a limited number of clusters,—say from 30 to 80. A shoot bears clusters near its base, two, on an average. Then, on a vine strong enough to bear 60 clusters, 30 good buds should be left at the annual pruning. The bearing wood should be kept near the original trunk or head of the vine. When one cane is sending out fruit-bearing shoots another shoot is chosen from near the main trunk, or head, to furnish fruit-bearing shoots for the next year; and the other or older cane is entirely cut away after the fruit is off. Thus the wood is constantly renewed. The new shoots which are to give bearing wood the following year are called renewals. Some systems of training renew back to the root every year or two. Every system must practice renewal in some way. Current systems of pruning renew to a head—or to the main trunk—each year. The trunk of the vine is carried up to the desired height—to one of the wires of the trellis—and one or more canes are taken out from its top each year. The object is to keep the bearing wood near the main trunk and to obviate the use of spurs. This method of pruning can be kept up almost indefinitely, and if care is exercised in keeping the stubs short, the head will not enlarge out of proportion to the growth of the trunk.

"**The Upright system** of pruning and training carries the trunk only to the lowest wire of the trellis. The canes—usually two in number—are tied horizontally on the bottom wire, and the bearing shoots are tied, as they grow, to the two wires above.

"**The Kniffin system** carries the trunk to the top wire. The canes are tied on the top wire and the bearing shoots hang. If the shoots run out on the top wire, clinging to it by tendrils, they are torn loose, so that they will hang: this is a very necessary practice. This system has distinct merit for strong-growing varieties, as Concord; it is also cheaper than the upright, since it requires no summer tying. The Upright system is better for the slender or shorter varieties, as Delaware, and also for those whose shoots stand erect, as Catawba. The main pruning is performed when the vine is dormant, preferably in January or February, although it may be begun in November, if the area to be pruned is large.

"Summer pruning is now practiced to the extent of pulling out suckers and weak shoots, and even this is not always done. Heading-in the vine in summer is likely to start side growths, which are useless and troublesome."

Trellises.—These vary with the system of pruning. They will be needed the third year after the vines are planted. Well-made trellises of No. 9 or No. 10 gauge wire and heavy locust or chestnut posts, will last for many years, though they will need some tightening every spring. The height of the posts will depend upon the system of training, as will the number of wires. The Kniffin system requires but two wires, the Upright three. The heaviest posts should be sorted for use at the ends of the rows, and well braced. One post to every three vines is the Chautauqua rule, making the posts 27 feet apart. The wires should be strung on the windward side and well stapled. The lower wire is usually about 32 inches from the ground. The distance between the wires is about 1½ feet, never more than 3 feet.

Vineyard Pests.—Our American Grapes are rarely troubled with the phylloxera, that great destroyer of European vineyards. European species, *Vitis vinifera*, now largely escape the ravages of this root-louse by growing upon roots of our sturdy American vines. Mildew and black rot are fungous diseases that sometimes make trouble by causing the leaves to fall and the clusters to decay. Mildew produces a brown rot of the Grapes; black rot gives them a dry, hard, shriveled surface, covered with minute raised dots. Spraying with Bordeaux mixture is the remedy for both, the number of times depending upon the prevalence of the disease. Usually the sprayer drives between two rows, spraying both at once. In badly infested regions the sprayings begin in May, before the buds swell, and extend into July, five or six doses being necessary. Usually, however, it is sufficient to begin spraying after the fruit has begun to set, and to spray only two or three times, as needed. The foliage and diseased berries should be raked together and burned in the fall, if the disease is troublesome. Scab, or anthracnose, may be detected by the hard, scabby patches it leaves on the fruit and stems. Spraying vines, trellises and posts with a strong sulphate of copper solution before growth starts, and afterward with Bordeaux is the remedy. Careful attention to pruning away and burning diseased wood also helps.

Bagging and Thinning.—Many insects love to taste the Grape and, therefore, in small vineyards or home plots, where especially perfect fruit is desired, the clusters are covered with grocers' paper bags soon after the fruit has set. This also has some effect in checking mildew and black rot. Thinning either clusters or berries is not often necessary with American Grapes if the pruning has been done with judgment, and with these sorts cluster-thinning may be limited to removing imperfect or decaying berries with small, sharp-pointed scissors. The European or hothouse Grapes need more attention in cluster-thinning, and sometimes the great "shoulders" are tied up to the trellis to admit light and air. Grafted on American stocks a number of these species are now grown quite successfully in home-garden plots.

Handling the Crop.—Unlike many fruits, the Grape does not ripen after picking. As soon as fully ripe, the clusters should be gathered by carefully cutting their stems, and spread on shelves, tables or shallow trays. If they are to be kept for a long while, the handling should be as careful as for eggs. An icehouse, or a fruit room, such as has been described, is convenient for storing the trays. Lacking this the cellar, or any cool room will answer. A crop overplus can often be held in cold storage of some sort until better prices can be realized. Concord is frequently held in this way for shipping in November; Catawbas keep even better and are shipped all through the winter. The usual Grape packages are 4- and 8-pound Climax baskets. Carriers are also used, holding two layers of four shallow trays each. The trays hold rather more than two quarts and are made like strawberry boxes of double length. These carriers are cheaply made and are given away with the fruit. The refuse Grapes, formerly a waste product outside of California, now go to the wine-makers and factories for unfermented grape juice. The latter is already a great industry capable of much expansion. Those who buy waste Grapes for wine are chiefly Italians who have bought little farms all through the Grape-growing districts.

Yields and Profits.—A Grape-vine usually begins bearing in its third or fourth year, and by the renewal system may be kept at it indefinitely, yielding larger crops as its growth and vigor increases. An average crop for the Concord is 15 pounds, though crops of 25 or more pounds are on record for mature vines. A grower of the Chautauqua section says that a man who cannot grow four tons of Concord per acre ought to drop out of the race. This is above the average yield, but there are also yields much greater than this. The average profits in the Chautauqua region are lower than in many others, presumably because the growers ship their fruit in crates to distant markets. Yet it is estimated that the Grape crop of one year brought to this belt \$92,250,000. When sold in smaller packages to near-by markets the profits are much better, averaging from \$100 to \$150 per acre, according to sections and varieties grown. Eight-pound baskets of well-grown Grapes bring in southern markets 30 cents to 50 cents each, "with brisk sales and no grumbling," the season through. Where Grapes are more plentiful the price is much lower in midseason, earlier and later sales paying best, as with all other fruits. Experts, who make a hobby of Grape-growing, sometimes carry off good premiums, even from small city lots. I have in mind one man who, from a half-acre lot, captured from \$300 to \$600 in premiums annually for over twenty years.

Varieties.—Some of the most productive and profitable are Catawba, Concord, Moore's Early and Niagara. Delaware is the favorite early dessert Grape, though a weak-growing sort. Campbell, Green Mountain, Winchell, Worden and Brighton are good early sorts for home vineyards.

THE STRAWBERRY

Although the general enthusiasm for the Strawberry is doubtless largely due to its being the first fruit of summer,—spring, if you will,—there is yet no other fruit at once so beautiful, refreshing, fragrant and delicately flavored. In ten or twelve months after planting, Strawberries may be depended upon for a good crop of delicious fruit. They can be grown successfully on almost any soil that is well fertilized and well cultivated. The soil where they are to be grown should be made soft and rich for at least 18 to 20 inches in depth. Early spring is the best time for planting in the northern home garden, unless the more expensive pot-grown plants are used. Strawberries are usually set 12 to 18 inches apart, in rows $2\frac{1}{2}$ to 3 feet apart, according to soil conditions and the variety of plants. Be careful not to cover the crowns with soil. At the end of the season they will form narrow matted rows, with plants 5 to 8 inches apart. This method will give more and better berries than thickly matted rows where all the runners are allowed to take root. A mulch of leaves or straw, applied after the ground freezes in winter, will be beneficial. Before growth starts in spring, remove the mulch to the edges of the rows, and it will help to keep the fruit clean and the soil moist through the fruiting season. Should frost threaten while the plants are in bloom, it is easy to give protection by replacing the mulch.

Hill Culture Gives Superb Berries, such as expert gardeners love to see upon their own tables and to exhibit at fairs. In this method no runners are allowed to form, and the plants are set 18 to 24 inches apart,—the richer the soil the greater should be the distance. If the physical condition of a plant is good, when runners are cut away its energies will go toward making a new crown and fruit-buds and a thicker mat of roots; but weak, poor plants may merely send out other runners. Good, hill-grown plants make beautiful broad stools and sometimes yield four or five quarts of large, even-sized berries, bright in color and rich in flavor. In this system the culture must be of the best and mulching will be of great benefit. The soil should also be rich in fruit-forming fertilizers. When well tended and fertilized the crowns will produce three or four large crops. By planting four to six varieties—early, medium and late—Strawberries may be enjoyed for nearly two months in even the northern states.

Strawberries for Profit are generally set in narrow rows, that are never allowed to get more than one foot wide. The old matted-row system is going out of favor. In good soils, during moist seasons, it gave large yields, but the berries were mostly small, and in times of drought, without irrigation, the crop was ruined. The plants were too thick, the weeds hard to keep down, the crop difficult to gather in the wide beds. In modern Strawberry culture the rows are much narrower and closer together, — $2\frac{1}{2}$ to 3 feet apart, with plants 18 to 24 inches apart in the rows. The black, sandy soils of some Strawberry belts need but a good plowing to prepare them for use, but hard clays need subsoiling, that the plants may not suffer in a time of drought. The Strawberry is a deep-rooting plant and very fond of moisture, always flourishing best on lands where the soil moisture is not far from the surface, yet where surface-drainage is good. The ideal Strawberry soil is found in the rather compact, deep clay loams, over the well-drained clay subsoils of the South Atlantic and Gulf states. One-year plants, that have never borne fruit, should always be used. They have many long, light-colored roots, which should be cut back somewhat in planting to make them start new growth more readily. In setting, do not spread the roots near the surface, nor twist them into a compact mass, but thrust in the trowel to good depth and let them fall, smooth and straight, into the opening thus made, pressing the fresh earth firmly against them. The cultivation which follows is not merely to keep the weeds down, but to keep the soil loose and mellow, and to retain moisture; thus the weeds will disappear. Another object of cultivation is to stimulate fine growth of roots and crowns before hot, dry weather stunts them. In early fall cultivation usually ceases, and it is at this time that southern growers prepare for new plantations. From November to February is the time for planting in the southern Atlantic and the Gulf states, the crop being grown there through the cool season. Intensive methods allow the fruiting of plants but once. Two or three crops from a planting is the rule, the first two being always the best. The older the bed the heavier the top-dressing should be. As the largest crops of fine berries are usually from plants about twelve months old, the first runners from the plants set, if they are strong and good, are "trained in" by hand along the rows. Four to eight runners from each good plant are established along the rows in this way, and the remainder cut away through the season like weeds. This plan of growing permits cultivation both ways until the runners start, retaining moisture and saving labor in hoeing.

Fertilizers for the Strawberry should be selected, as for other crops, only after a thorough study of the soil. The caution so often given about purely nitrogenous ferti-

lizers applies here also. An old rule that still holds good is that it is better to fertilize heavily the crop preceding Strawberries than the growing crop of berries. This allows the excess of nitrogen to escape from manures. Heavy applications of commercial fertilizers are better for the Strawberry than stable manure, which is apt to give trouble by bringing in weeds and grass. The difference between a heavy crop of berries and a dead failure generally depends on the liberality with which fertilizers are applied and the moisture in the soil. A Wisconsin grower who uses only manures applies sixty loads to the acre. A southern grower uses a complete commercial fertilizer at the rate of 1,500 pounds a season, applying 500 pounds in the furrows at planting time,—in November and December,—500 more at the first working in spring, and another 500 at different times in cultivation after the first crop is gathered. Unleached wood ashes, applied at the rate of 50 to 100 bushels per acre, is also an excellent fertilizer for Strawberries.

Mulches play an important part in Strawberry culture, especially on dry soils and in cold climates. They are applied after the ground freezes in winter, to protect the plants from freezing and thawing. Raked from over the crowns to the row-edges in spring, they are convenient for quickly covering the plants again should frosts threaten while they are in bloom. Left through summer along the edges of the rows and close about the crowns of the plants they help to keep down weeds, keep the fruit clean and the soil moist and cool while the berries are ripening. Moisture is as important as fertility in Strawberry-growing, and anything that helps to keep it in the soil near the roots is a valuable aid. The juice in the Strawberry's rich red fruit-cells is merely delightfully tintured water, as analyses of the fruit will show, and therefore the crop is largely in proportion to the water supply. Substances that are light and do not pack down closely over the crowns are used in mulching,—straw, leaves, garden litter, marsh hay, etc. In the South pine needles are much used. In the northern prairie states mulches 4 to 6 inches thick are necessary. Where so heavy it is necessary to remove them from the field if cultivation is given before the plants are in bloom.

Pollination.—Imperfect or self-sterile flowers are characteristic of some of the heaviest cropping varieties. Planted alone, they often make a fine growth and bloom profusely, but ripen only a few berries. When some staminate, or pollen-bearing variety, is planted near these pistillate sorts the change is wonderful and the crops heavy. Any variety will pollinize any other variety if it bears sufficient pollen, and if the two kinds bloom at the same time. If the field, or bed, is chiefly of pistillate sorts, every third row should be of a pollen-bearing kind. Perfect-flowered varieties, bearing both stamens and pistils, are self-fertile, and set crops from their own pollen.

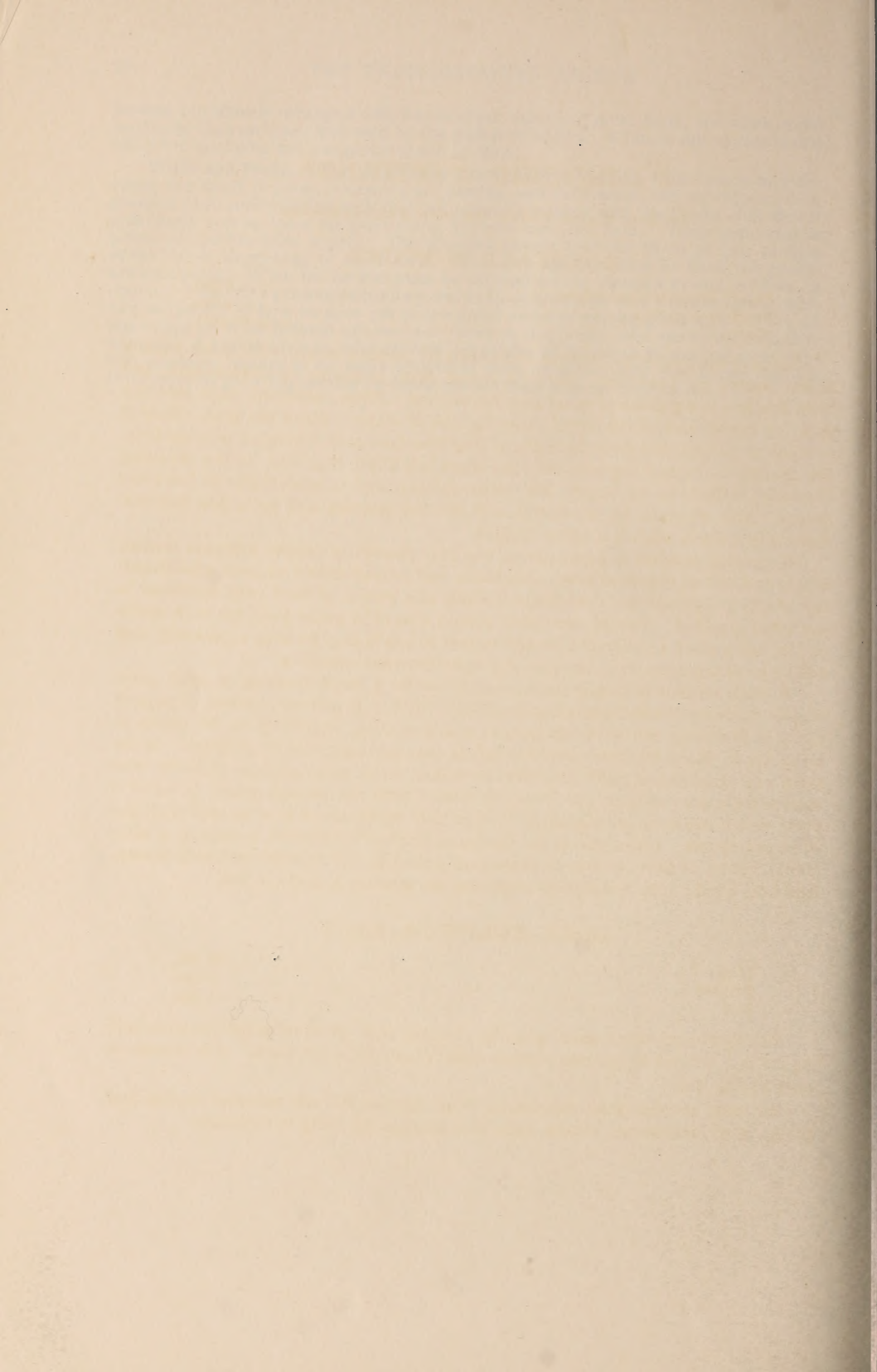
Pot-grown Strawberry Plants are convenient for planting at any time through summer or fall when the beds are ready, and will give a good crop the next season. They are also used for forcing in winter, when their berries command a high price. They are grown from the first strong runners made in spring, planted in 3-inch pots of rich soil. The idea of creeping along the rows to bury the pots and train the runners into them is amusing. The pots are made ready before the runners, each with a cluster of white root-points, are taken from the rows. If the day is warm they can make the journey to the potting shed in a bucket of water and without wilting. Here they are potted like other plants, plunged in rows in the garden and shaded and watered until established. When the little pots are full of white roots, the plants are shifted to 4-inch, and finally into 6-inch pots, in which they bear their fruit or from which they are sold. A rich, fine mellow compost is used in potting, and good attention is given to watering. Coal-ashes or cinders should be placed in under the pots in the rows, to keep worms out. When started early and given good care, such plants give superb clusters of large, high-flavored berries.

Strawberry Enemies are not so plentiful as with other fruits, and are easily managed. It is only in the old system of fruiting beds or rows for a number of years that such insects as the white grub and leaf-worm become troublesome. Such fungous enemies as the leaf-blight can be held in check by spraying with Bordeaux, as for other fruits, but the best remedy for both insects and diseases is to fruit the rows but once or twice and then plow up and plant to other crops. Newly plowed sod land should not be planted in Strawberries on account of grubs. Cultivate in hoed crops the first year to kill the grubs.

Marketing.—Pick early in the morning, as soon as the fruit is dry enough, and send to market immediately. The fruit stands up better thus, and sellers can dispose of good loads to better advantage. Never allow a berry to be pulled off; $\frac{1}{4}$ of an inch of stem should be pinched off with it. Never allow a berry to go into a market basket that you would not pick to eat out of hand. Small baskets filled with fine

berries, attractively arranged with leaves about them and quite fresh, are much more profitable than ordinary fruit sold by the gallon or bushel. Gluts in the market rarely affect the man who has a superior grade of fruit.

Yields and Profits.—The Strawberry's comparative freedom from insects and diseases, the small expense necessary in planting and cultivation, the enormous yields possible from well-selected soils that are properly treated, and the profits that almost unfailingly accrue, have tempted many growers into the field. Their estimates of yields and profits differ widely. The shipping season lasts for three or four months at the South, shortening to northward. With rich markets near at hand the profits are enormous. When the berries must be shipped a long distance profits are less, of course. I find that growers consider 5,000 to 8,000 quarts an acre a conservative yield, and net profits of \$150 to \$300 per acre a good average among good men. They do not count on frost failures oftener than once in five years, and never on complete failures. A Maine grower, who reports net profits of \$1,100 to \$1,200 per acre, says that intensive culture is far more profitable than extensive, and that it costs only a trifle more to grow big berries for fancy market than to grow little ones.



Fungicide Formulas

For Rots, Blights, Mildews and other Fungous Diseases

BORDEAUX MIXTURE

Copper sulphate (blue vitriol)	6 lbs.
Quick or stone lime	4 lbs.
Water	45 to 50 gals.

Dissolve the copper sulphate in an earthen or wooden vessel with three gallons of hot water; or, preferably, put in a coarse sack, as burlap or cheese-cloth, and hang this in 4 to 6 gallons of water near the surface. When dissolved, pour into the spraying barrel, and fill the barrel about half full of water. Slake the lime, dilute it to 10 or 15 gallons, and pour this milk of lime into the barrel through a wire strainer. Do not mix the copper sulphate and lime when less dilute than this, as the resulting Bordeaux is likely to be lumpy, will settle quickly, and is more liable to burn the foliage. Add water to fill the barrel, and stir the mixture well for a few minutes. Agitate frequently while it is being applied.

If spraying peaches or Japan plums, use two pounds of copper sulphate instead of six, and add an excess of lime. Bordeaux will adhere better to such smooth-surface plants as cabbage and cauliflower if about one pound of hard soap dissolved in hot water is added. The mixture itself should always be made fresh for each application, but a stock solution of lime and copper sulphate may be kept separately, and will be good economy when the spraying operations are extensive.

A stock solution of copper sulphate sufficient for a day's spraying in most cases may be made by dissolving 36 pounds of blue vitriol in 36 gallons of water. For each barrel of Bordeaux use two to six gallons of this solution, according to the plants to be sprayed. Keep this stock solution tightly covered to prevent evaporation. In the same way 36 pounds of quick lime may be slaked in as many gallons of water, and used as the copper solution; or it may be slaked with just enough water to make a putty, which will keep indefinitely if covered with water, and it is to be used with the ferrocyanide test. If the lime in the Bordeaux mixture is deficient, a drop of a saturated solution of ferrocyanide of potassium added to the mixture will turn brown. Add lime till the drop remains colorless and the mixture is ready to use.

LIME - SULPHUR - SALT

Lime	21 lbs.
Sulphur	18 lbs.
Salt	5 lbs.

Boil two hours with a small quantity of water, then dilute to 50 gallons with boiling water. Do not let mixture become cold; spray while yet warm. For winter or early spring use.

All state entomologists recommend lime, sulphur and salt treatment for San José Scale. Very satisfactory results have been obtained by using this formula.

W. T. HOOD & CO.

Old Dominion Nurseries
RICHMOND, VIRGINIA